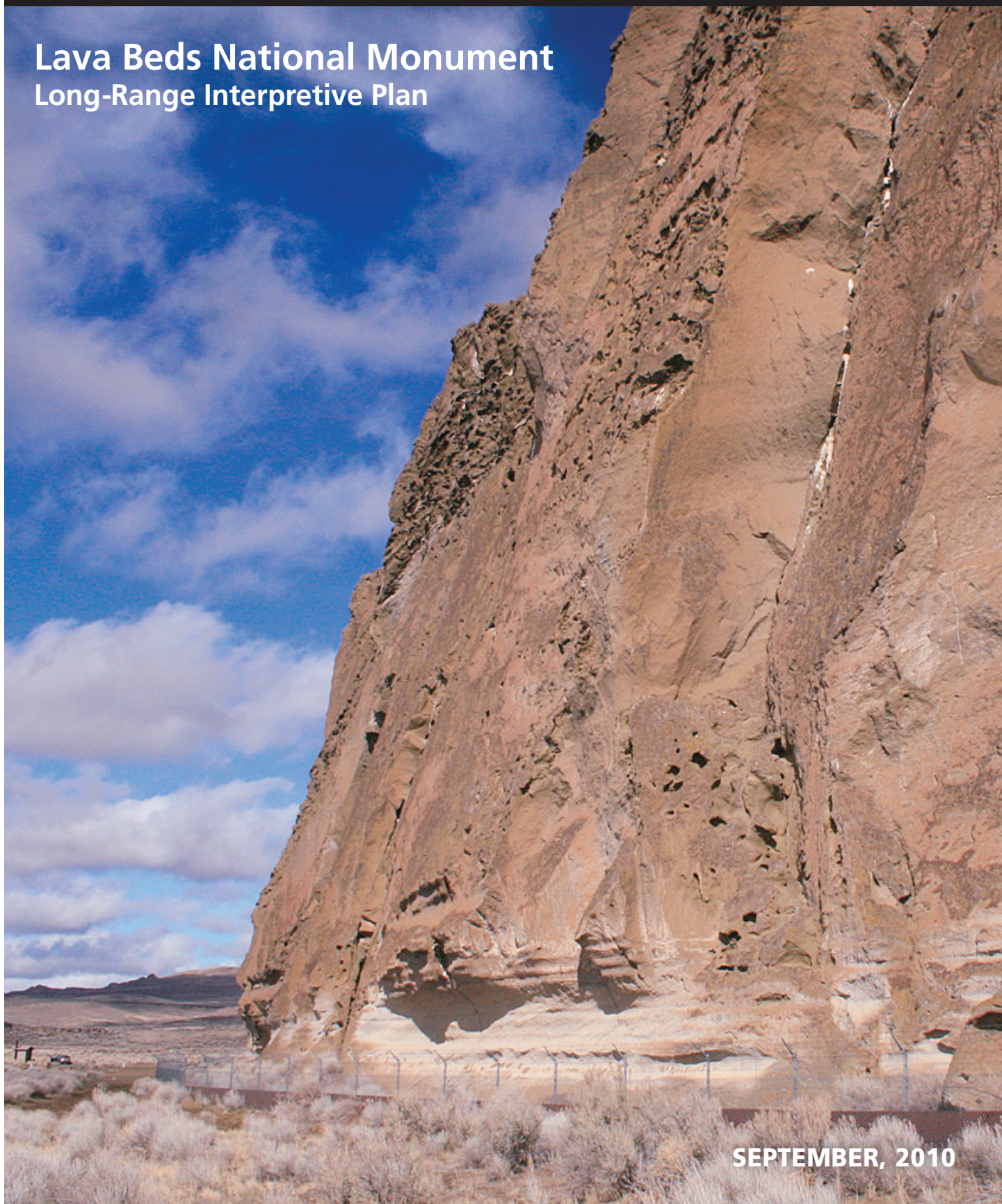


Harpers Ferry Center
National Park Service
U.S. Department of the Interior



Lava Beds National Monument

Long-Range Interpretive Plan



SEPTEMBER, 2010



Lava Beds National Monument
Long-Range Interpretive Plan

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Introduction

Lava Beds National Monument is located in a remote area of far northern California in the beautiful Klamath Basin. Flanked by the Modoc National Forest and the Tule Lake Wildlife Refuge, the monument offers a dramatic blend of natural and cultural resources. Volcanic features, including hundreds of lava tube caves, make the monument a living laboratory for geological research, as well as a mecca for cavers of all abilities. In addition, the monument includes three distinct ecological zones, abundant bird life, and exceptional scenic views. Nearly 28,000 acres of the monument are designated as wilderness. Finally, the quality of darkness in this isolated area makes the Lava Beds night sky one of its most impressive features.

Cultural resources include outstanding ancient rock art at Petroglyph Point. Multiple sites of the Modoc War are prominent features. During this conflict in 1872-73, a small band of Modoc Indians held off a regiment of the U.S. Army from the safety of the rugged volcanic terrain now known as Captain Jack's Stronghold.

All these resources, the stunning scenery, and the very remoteness of the monument combine to create a unit of the National Park Service that is a magnificent place for visitors to learn history, view wildlife, and enjoy a unique landscape.

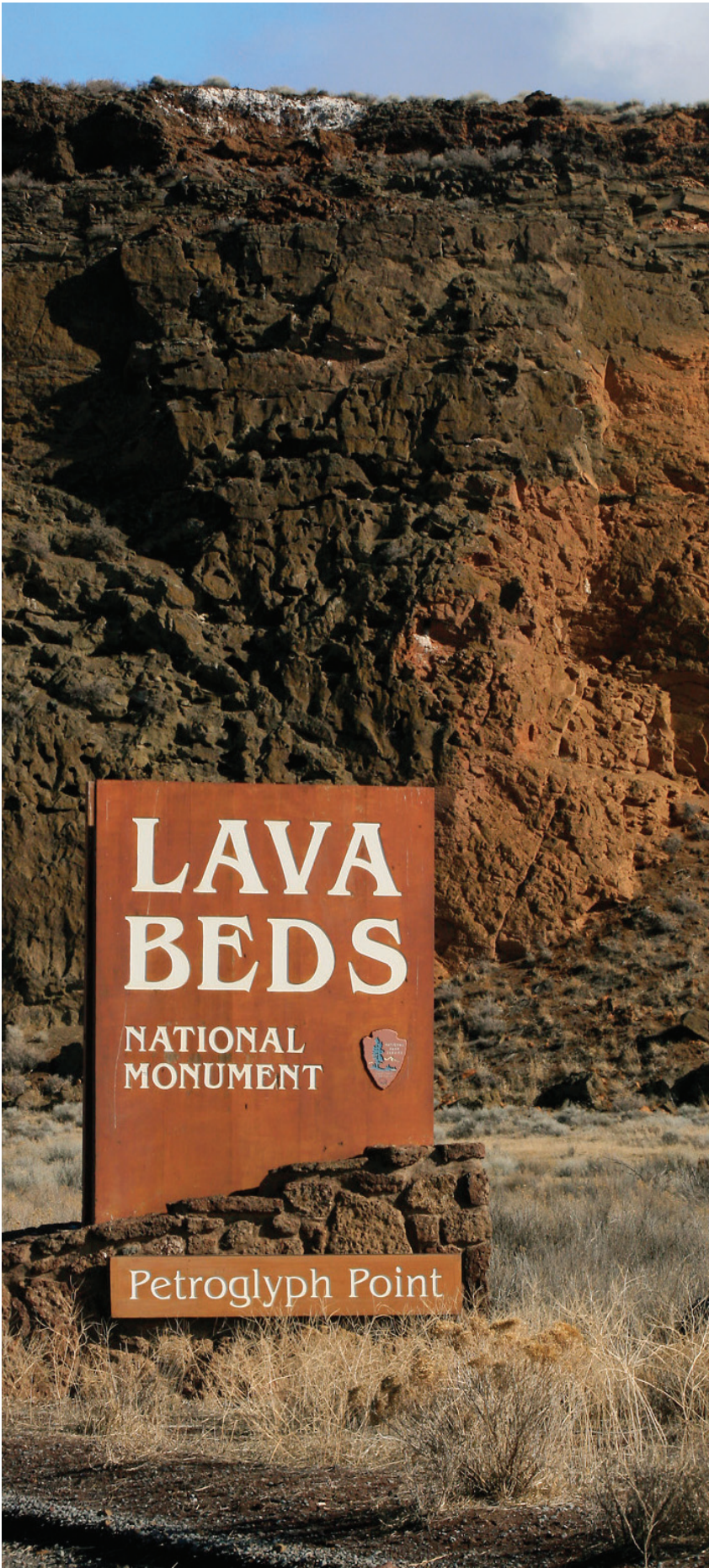
Planning Background

The National Park Service (NPS) has adopted a unified planning approach for interpretation and education. This approach combines planning for interpretive media, personal interpretive services, and education programs. The Comprehensive Interpretive Plan (CIP) is the basic planning document for interpretation. It was formally adopted as part of NPS guidelines in 1995. Responsibility for creating the CIP lies with each park's superintendent.

The CIP process helps parks make choices. It provides guidance to park staff by clarifying objectives, identifying audiences, and recommending the best mix of media and personal services to use to convey park themes.

Although the CIP as defined in Director's Order 6 is composed of specific elements, good planning is customized to meet each park's needs and situation. The CIP is not a recipe. Rather, it is a guide to effective, goal-driven planning. While it considers past interpretive programming, it is primarily a forward-looking document that concentrates on actions needed to create or sustain a vigorous and effective interpretive program for the future. All CIPs have three components: the Long Range Interpretive Plan (LRIP), a series of Annual Implementation Plans (AIP) and an Interpretive Database (ID).

THE LONG RANGE INTERPRETIVE PLAN. The heart of the CIP is the Long Range Interpretive Plan (LRIP). The LRIP defines the overall vision



and long-term (5-10 year) interpretive goals of the park. The process that develops the LRIP defines realistic strategies and actions that work toward achievement of the interpretive goals.

THE ANNUAL IMPLEMENTATION PLAN. The completed LRIP is a critical part of the CIP, but it does not stand alone. Actions in the LRIP are divided into annual, achievable steps and reproduced in the Annual Implementation Plan (AIP), the second component of the CIP. Creating a series of these AIPs that implement the actions outlined in the LRIP simplifies the park’s annual planning process.

INTERPRETIVE DATABASE. The third component of the CIP is the Interpretive Database (ID), an ongoing compilation of information, reports, bibliographies, plans, and inventories that document the background for and process of developing the LRIP.

Prior Planning.

Lave Beds National Monument had been engaged in a number of planning initiatives just before the start of the interpretive planning process. Since prior planning included a General Management Plan that addresses significance and themes, the LRIP process was able to build on those elements. As of the publication of this document, the GMP Preferred Alternative contains a heavy emphasis on interpretation and education, including additional staff, in-park classroom space for school programs and public workshops, and interpretive enhancements at Petroglyph Point.

Planning Foundation

Enabling Proclamation

Lava Beds National Monument was established in 1925 by Presidential Proclamation No. 1755 to preserve and protect “objects of such historic and scientific interest.” Objects of historic interest referred to resources related to the Modoc War of 1872-1873 and objects of scientific interest referred to its unique geologic formations. The monument was transferred to the Park Service in 1933 by Executive Order 6166. In 1951, a second presidential proclamation expanded the monument to include cliffs with petroglyph carvings and a large cinder cone “important to the geologic interpretation of the Lava Beds National Monument.”

Purpose

Park purpose statements describe why a site was set aside and what specific purposes exist for it. They are derived from legislation, legislative history, public participation, and public rule making. Purpose statements may reflect upon traditional purposes of preservation and enjoyment, the linkages between the management unit and its cultural and natural resources, connections with groups and areas external to the park, and language of the enabling legislation. The Lava Beds purpose statement is as follows:

Lava Beds National Monument (Lava Beds) protects and interprets volcanic and natural features of scientific interest, and evidence of prehistoric and historic human settlement, use, and conflict.





Significance

Park significance statements describe the distinctiveness of the combined resources of a park. The statements can reflect natural, cultural, scientific, recreational, inspirational, and other resources. They embody the power of the place, and describe the stories that can best be told at the site and nowhere else. These statements articulate the importance of the park’s resources to our natural and cultural heritage. Significance may evolve over time as a result of discoveries and updates to knowledge about the place.

Significance statements for Lava Beds National Monument were stated as part of the General Management Plan. The monument is significant because:

- 1. Lava Beds protects and interprets the largest concentration of lava tube caves in the continental U.S., along with unique environments and cave-dependent species.
- 2. Lava Beds protects and interprets objects, sites, and the rugged volcanic setting associated with the 1872-73 Modoc War.
- 3. Lava Beds contains archeological evidence of human occupation extending back in time to the early Holocene (10,000 years to present), exceptional rock art consisting of regionally-distinctive petroglyphs and pictographs, and a setting of continued significance to Modoc people as a part of their traditional homeland.

4. Lava Beds protects and interprets outstanding, diverse, abundant, and well preserved lava flows, cinder cones, spatter cones, Maar volcanoes, and other volcanic features associated with the Medicine Lake shield volcano.

5. Lava Beds provides a wilderness experience in the unique volcanic landscape of the Great Basin and Cascade ecosystems.

6. Lava Beds protects and manages native plant and animal species and processes representative of the transition zone for Great Basin and Cascade ecosystems.

In addition, Lava Beds National Monument is significant on a regional and local level:

Lava Beds National Monument contains sites and resources associated with homesteading and ranching, early cave exploration and use, the Civilian Conservation Corps and park development, and war on the home front.

Interpretive Themes

Interpretive themes embody the most important ideas or concepts communicated to the public about a park. They convey the significance of the resource, and highlight the links between tangible elements, intangible meanings, and universal concepts that are inherent in the park’s resources. The themes connect resources to larger processes, systems, ideas, and values. They define the core content of the educational messages the park

offers, and serve as the building blocks upon which interpretive services and educational programs are based.

The primary interpretive themes at Lava Beds National Monument are:

1) Lava Beds’ abundant lava tube caves offer outstanding opportunities for exploration and research in rare habitats.

There are more than 700 known caves in the monument, and many more remain undiscovered. Caves are more concentrated here than anywhere else in the continental United States. The caves contain abundant and well preserved lava features, perennial and seasonal ice, and some secondary features. They contain significant summer maternity colonies of Mexican Free-tailed bats

Skull Cave interior





Captain Jacks Cave
in the Lava Beds,
Harper's Weekly,
June 28, 1872.
Courtesy Library of
Congress

at the northernmost extent of their range, and the largest winter roost of Townsend's Big-eared bats (a federal species of concern) on the west coast of the U.S. Plant species native to much wetter climates and many other species of vertebrates, invertebrates, and bacteria that cannot survive the surface environment are also present.

Scientific study is ongoing in Lava Beds National Monument's caves through the NPS, the Cave Research Foundation, and others. Much remains to be learned about cave geology and ecosystems.

Why does this matter? Lava Beds National Monument's rare cave habitats

are laboratories not only for geological research, but also for the study of adaptations and climate change. Fourteen species of bats found in varying habitats, plants usually observed in much wetter climates, and species that can only survive in caves provide researchers with data that has extended scientific knowledge and may contribute to a better understanding of the ways organisms adapt to a changing environment. In addition, the opportunities to explore the caves at Lava Beds National Monument are exceptional compared to those available at most other cave parks.

2) Lava Beds National Monument contains the majority of the battle sites of the Modoc War of 1872-1873, which tell the story of a conflict between two cultures that endured tragedy in order to defend or acquire land.

Decades of conflict between Modoc Indians and settlers over land and resources led to the Modoc War. Greatly outnumbered but using their knowledge of the terrain and natural resources, a small band of Modoc consistently outmaneuvered the U.S. Army for many months. Because the Modoc people were moved to Oklahoma, their presence on the land was diminished and they eventually lost most of their homeland to settlers. The disruptions during the latter half of the nineteenth century altered their way of living. However, cultural elements, like ideology and material assemblages of these people over the last 150 years. The Modoc War was highly publicized in the press

and scrutinized by the American public, and the interpretation of its events helped bring an end to President Grant's Indian Peace Policy. It was one of the most costly wars in American history per person involved, and was the only Indian War in which a general—E.R.S. Canby— was killed.

Why does this matter? The story of the Modoc War provides insights into the concept of "homeland," and what it means to lose it. It addresses the heartache of displacement, the effects and unintended consequences of human migration, and cultural differences in how land and its resources were, and continue to be, perceived. It touches on the nature of conflict over land, the factors that determine who will control it, and the balance of power in asymmetrical warfare, all issues reflected regularly in today's newspaper headlines.

3) Abundant archeological sites, exceptional petroglyphs and pictographs, and numerous sites of traditional significance provide a link between past residents and modern peoples throughout Lava Beds National Monument.

Spanning more than 11,000 years, the monument and its surrounding area is one of the longest continually-occupied sites in North America. Exceptional examples of prehistoric and historic petroglyphs and pictographs are protected both on the surface and in caves, representing the densest concentration of Native American rock imagery in California.



Though the intent of the original artists is not known, inferred meanings about this art form are still evolving. Many other sites within the monument continue to hold great importance for modern people, especially those of Modoc descent. These include sites used for permanent and seasonal housing, the acquisition of food and materials, and tool making, as well as many sites of traditional significance.

Why does this matter? Research on archaeological sites in the monument provides insights into the lifeways of people of the past as they sought to feed, clothe, and protect their families. The petroglyphs and pictographs provide visitors the opportunity not only to ponder their common humanity with those who created the markings, but also to experience a sense of wonder

and mystery as to their meaning and the reasons for their creation. How will people of the future interpret the marks we leave on our world? Will their meanings be any clearer than the petroglyphs are to us today? To people of Modoc descent, many of the monument’s features provide a link to traditions going back thousands of years, and serve to strengthen family and tribal ties. This theme also provides opportunities to address research, preservation, and cultural sensitivity messages concerning these nonrenewable resources.

4) Outstanding, diverse, abundant, and well-preserved volcanic features at Lava Beds National Monument illustrate the powerful geologic history of the Medicine Lake shield volcano, where activity

is likely to occur again.

Medicine Lake is one of only two shield volcanoes in the Cascade Range, and is the largest volcano by surface area in the western United States. An outstanding array of geological features is visible in the monument, including lava tubes, surface lava flows, cinder cones, spatter cones, and Maar volcanoes. All provide evidence of the forces of plate tectonics that created the Cascade Range, and the wide variety of features that can result from volcanic activity. The Medicine Lake volcano is still active -- the last eruption within Lava Beds was less than 1100 years ago, and the last on the volcano was less than 900 years ago.

Why does this matter? The volcanic features of Lava Beds National Monument bring home to visitors the power of geologic forces, along with a reminder that – in geologic time – the last eruption of the Medicine Lake volcano was very recent and that eruptions may well occur again. Yet the features on this extraordinary landscape are fragile, and subject to wear and tear both by visitors and by natural processes, creating a strong need for resource protection messages.

5) Over half of Lava Beds National Monument is protected as wilderness, providing a primitive recreation experience in the unique volcanic landscape of the Great Basin and Cascade ecosystems.

Lava Beds National Monument’s wilderness provides a primitive recreational experience with

opportunities for solitude, adventure, and escape. Wilderness resources including expansive vistas, good air quality, a clear night sky, and natural quiet are also protected. The rare combination of volcanic geology and Great Basin ecology are found together in Lava Beds’ wilderness.

Why does this matter? The concept of “wilderness” speaks to traditional American values like independence, self-sufficiency, individualism and freedom. “Just knowing it’s out there” provides the tantalizing possibility of a transition out of mundane daily life into a different, more nature-connected world, and brings people to an appreciation of the concept of wilderness, even if they never set foot physically in the wilderness area. The idea that even wilderness must be managed is an important resource protection message. In addition, the wilderness area provides the unique opportunity to explore overlapping ecosystems in combination with volcanic features.

6) Native plants, animals, and processes are protected at Lava Beds National Monument, and provide important scientific and educational opportunities as surrounding landscapes continue to change.

Lava Beds National Monument contains three distinct plant communities —bunchgrass-sagebrush, juniper-brush land, and pine forest —and provides both a year-round and a seasonal refuge for a wide range of animals. Early grazing and fire suppression altered the monument’s

plant landscape, and an attempt to reintroduce extirpated desert Bighorn sheep in the 1980's was unsuccessful. Today however, the use of prescribed fire and the control of non-native species are helping native plants and processes return. Ecological lessons learned at Lava Beds can be useful in managing more altered lands outside the monument. Paleontological resources also provide evidence of past climate change, and today's resources provide opportunities to gather contemporary evidence.

Why does this matter? Lava Beds National Monument demonstrates that even a somewhat intact ecosystem like that of the monument cannot function as an island, remote from outside influences. Study of key indicators in the ecosystem, like healthy native grasslands, the

presence of rare mammals like the pika and the population status of certain species of bats, may help scientists better understand forces at work in the world today, including the ramifications of climate change.

Secondary interpretive themes for Lava Beds National Monument are:

7) Between the end of the Modoc War and the establishment of a national monument in 1925, homesteaders, ranchers, cave explorers, and bootleggers persevered through harsh conditions in the lava beds and surrounding area to fulfill independent visions for their lives.

Before the establishment of a national monument, the lava beds attracted a variety of colorful characters to the

challenge of exploring and making a living in its rugged landscape. Both the physical remains of settlement and widespread vegetation change resulting from ranching remain today. The Coppock Flag painted at Petroglyph Point also represents the patriotism of the World War I era. The early exploration, development, and promotion of Lava Beds National Monument's caves—especially by local resident and amateur geologist J.D. Howard—attracted the first recreational visitors, and led to the establishment of a national monument to protect both natural and historical resources.

Why does this matter? Many people in the area have strong local connections to the features of the monument. They have lived, worked and played in and near the monument for multiple generations, and the monument symbolizes the value of rugged outdoor exploration that they can pass on to their children. Those connections, acknowledged, honored, and interpreted, may help create stewards for the monument for generations going forward. The monument's plant and wildlife regimes also present some management challenges today as a result of past uses that were incompatible with landscape preservation.

8) Since the establishment of a national monument in 1925, the era of modern visitation and services has been facilitated by federal programs such as the Public Works Administration, a Civilian Conservation Corps camp, and the Mission 66 initiative.



Lava Beds became an NPS national monument in 1933 with little infrastructure to serve the public. Camp Lava Beds, located on the former site of Gillems Camp, exemplified the hundreds of Civilian Conservation Corps (CCC) camps in national parks during the Depression. Over a thousand young unemployed men, largely from Eastern states built roads, buildings, trails, and utilities between 1935 and 1942, largely by hand, and led the first interpretive tours. The legacy of the CCC at Lava Beds National Monument can still be seen at the Schonchin Butte fire lookout, park trails, the superintendent's residence, rock and timber picnic tables, and the oil and gas house. Major construction was again undertaken in the early 1960's under the Mission 66 program in advance of the 100th anniversary of the NPS. Improvements were made to the monument's roadways and campground, and a major expansion of park housing was completed.

The Devils Homestead



Civilian Conservation Corps workers load cinders for road development.



Why does this matter? Many people in the local area and beyond have personal connections to the CCC and the features they constructed within the monument. Both the story of the CCC era and the original infrastructure of Lava Beds are core to the monument’s creation and development, and illustrate a larger chapter of National Park Service history. Along with the Mission 66 era, the development history of Lava Beds and the NPS provide tangible connections to a history of public infrastructure and an ethic of public lands stewardship and service that can inform current and future efforts.

Management Goals

These goals describe management’s intent in offering interpretive and educational programs and services. They are based on NPS’ Five Pillars or Tenets of the Interpretation and Education Renaissance Action Plan, adopted in 2004. The Tenets are:

- *Access:* Engage All People To Make Enduring Connections To America’s Special Places
 - *Technology:* Use New Technologies
 - *Partnerships:* Embrace Strategic Interpretation and Education Partners
 - *Standards:* Develop and Implement Professional Standards
 - *Evaluation:* Create a Culture of Evaluation
- Goal #1:** Create an LRIP with a strong link to the General Management Plan preferred alternative.
- Goal #2:** Focus interpretation on resource protection.
- Goal #3:** Focus interpretive services on educational outreach and “Park as Classrooms” programs.
- Goal #4:** Increase audience diversity. Seek young audiences.
- Reach out to the area’s large Latino community, which does

- not use the park in proportion to population numbers, as well as Native American residents of the area.
- In an area characterized by pockets of poverty, find ways to reach local audiences through formal outreach education programs.
 - Reach parents through programing that initially targets children.

Goal #5: Keep current with and utilize new technology, especially as an outreach tool for underserved audiences.

Visitor Experience Goals

Statements of desired visitor experiences describe how the park’s interpretation and education program facilitates intellectual, inspirational, emotional and physical experiences for visitors. These statements describe what visitors to the park would like to learn, feel, do, or experience when visiting the park (either in person or remotely).

All visitors are seeking something of value for themselves. The visitor defines what that value is for him/herself. Visitor experience goals describe what experiences and opportunities should be available to the average visitor on an average day, whether or not the visitor chooses to experience them. Experiences are categorized in four different ways. Each of these categories must be considered when developing visitor experience goals.

1. Cognitive or *intellectual* goals that involve *knowledge* and allow people to

think and *learn* (using their brains)

2. Action-oriented goals that involve *activity* and allow people to *do* and *participate* (using arms and legs, hands and feet)

3. Experiential or *sensory* goals that involve the senses and allow people to immerse themselves in the experience (using sight, hearing, touch, smell, taste)

4. Emotional or *inspirational* goals that involve *attitudes and values* and allow people to *feel* (using empathy and human connections)

The Lava Beds Management Team developed the following visitor experience objectives for the general audience:

Cognitive goals:

- Visitors want to learn about caving.
- Visitors want to learn how lava tubes are created.
- Visitors want to understand events of the Modoc War.
- Visitors want to learn about Modoc culture.
- Visitors want to gain understanding about diverse flora and fauna and the ecosystems present at Lava Beds National Monument.

Action-oriented goals:

- Visitors want to interact with Lava Beds National Monument interpreters.
- Visitors want to explore Lava Beds National Monument on their own.
- Visitors want to walk and crawl through caves, on their own and/or on a guided tour.
- Visitors want to hike through



Entrance to Skull Cave

Great Basin sagebrush communities.

Experiential goals:

- Visitors want to immerse themselves in the landscape and geology of Lava Beds National Monument, including its sights, sounds, smells, and textures.
- Visitors want to experience true silence, away from the sounds of civilization and even – in the depths of the caves – all sounds of nature.
- Visitors want to experience the Lava Beds National Monument landscape during a spectacular sunset.
- Visitors want to see and hear wildlife.
- Visitors want to experience an unobstructed view of the dark night sky.

- Visitors want caving experiences that will entice them to return.

Emotional/Inspirational goals:

- Visitors want to empathize with the struggles of the Modoc tribe, the settlers, and the soldiers involved in the Modoc War.
- Visitors want to feel challenged, scared, and/or awed by cave environments.
- Visitors want to experience the wonder of a unique environment.

Existing Conditions

The Setting. Lava Beds National Monument is located on the edge of the Klamath Basin in northeastern California, approximately 50 miles southeast of Klamath Falls,

Oregon, and 30 miles from Tulelake, California. Petroglyph Point, a separate unit of the monument to the north, is located approximately three miles east of the main unit.

The monument spans two California counties, Modoc County and Siskiyou County. Klamath County, OR, is approximately 10 miles north of the park. The communities in these counties serve as gateways to the park, providing a variety of goods and services for park visitors. Local population centers include the small towns of Tulelake, Merrill and Alturas. The nearest city is Klamath Falls, Oregon.

Much of the land in the Klamath Basin is federally owned, with national forest lands predominating but with substantial acreages also administered by the Fish and Wildlife Service and Bureau of Land Management. Private lands adjoin the monument on the northeast and south boundaries of the main unit and on the west and north sides of Petroglyph Point.

Forest Service and BLM administered lands are managed for multiple uses, including forest products, mineral resources, grazing, and recreation. The Fish and Wildlife Service manages the Klamath National Wildlife Refuge as an important link in western waterfowl migration routes. Private and leased public lands in the vicinity of the monument are used primarily for irrigated agriculture, with water supplied by the Bureau of Reclamation’s Klamath Project.

State highways provide good access

to the monument from the north and east. Access from the south and southeast is via slow speed rural roads. The Modoc Volcanic Byway, which incorporates some of these roads, functions as a tourism route through the area.

The nearest commercial air service is in Klamath Falls. AMTRAK provides rail service to Klamath Falls.

Information and Orientation.

Recent improvements to signage have improved wayfinding to Lava Beds National Monument, but the park’s remote location presents challenges to those unfamiliar with the region. Most visitors approach the park from the north via Hill Road. Because the Visitor Center is at the south end of the park, orientation to the park’s features is inadequate in the northern reaches. If visitors follow signs and turn left to important park features like Captain Jacks Stronghold, Canby

Local agriculture near Lava Beds





Lava Beds NM
Visitor Center

Cross, and Petroglyph Point, they will not encounter orientation until they approach an information kiosk on the way to Petroglyph Point. The kiosk is shared with the U.S. Fish and Wildlife Service, which orients people to the nearby Tule Lake National Wildlife Refuge.

If visitors turn right upon entering the park, they will go through an entrance booth (open seasonally) for ticketing (where they receive a park brochure with a map), and, a little farther along, have an opportunity for further orientation at a kiosk and restroom at Gillems Camp. From there it is about eight miles to the Visitor Center. The Visitor Center is new (built in 2004) and well appointed, with excellent exhibits in a small, very comfortable room. It is open every day except Christmas, with slightly extended hours during the summer season. The Lava Beds Natural

History Association operates a small shop featuring books about the resource, souvenirs, snacks, and hardhats for cave explorers. Flashlights, also supplied by the NHA, are available for loan to all visitors. A booklet featuring maps of many of the caves is also for sale.

The Lava Beds website, at www.nps.gov/labe, is rich with background information and orientation materials. It offers dozens of pages of information, interpretation, modern and historic photos, maps, links to park site bulletins, area attractions, and weather forecasts, a webcam from the Visitor Center, and staff contact information. Visitors who research an upcoming trip to Lava Beds via the internet will encounter a wealth of information about the natural and cultural features of the site, and about available activities and events.

Most incoming public phone calls as

well as inquiries via mail and e-mail are handled by Visitor Center staff.

Interpretive Programs. Though the Visitor Center is located in the southern part of the monument, most visitors interested in caving make it one of their first stops in order to obtain the necessary information and equipment. Services offered include: personal assistance at the desk; availability of maps, site bulletins, and information about Lava Beds National Monument and surrounding attractions; daily loans of flashlights for self-guided caving; museum exhibits, including audio stations, a computer program, and tactile items, that cover the majority of the monument’s primary interpretive themes; and a 15-minute video produced in 2007 that covers all primary interpretive themes and provides basic orientation information.

The concentration of visitation in the summer, in addition to staffing constraints in the off-season, focuses most public interpretive programming on the summer season. In summer, evening programs are offered most nights in the monument’s campground amphitheater, usually via reverse projection digital slide show in a modern projection facility constructed in 2004. These programs allow a more in-depth look at the monument’s diverse interpretive themes, and can greatly enhance the depth of visitor understanding and appreciation. Ranger-guided cave tours are also currently offered to one or more developed caves daily in summer, and provide a safer and more interpretive experience of the monument’s

underground environment. These tours vary widely in difficulty level to meet the needs of a variety of visitors, as well as public demand for ranger-guided tours from those not comfortable caving on their own. Additionally, guided walks through natural and historical areas and porch talks on a variety of monument interpretive themes are offered in summer as staffing allows. Though these types of programs are sometimes sparsely attended at sites in the south end of the monument, *there are currently not enough summer staff to offer frequent summer walks and talks at popular sites in the north end of the monument, particularly at Petroglyph Point. In general, evening programs are very well attended by a percentage of visitors camping in the campground, and participants could be easily garnered for additional ranger-guided cave tours during summer as well as on spring and fall weekends if staffing*

Visitor Center
exhibit



levels allowed. There is also demand for ranger-guided programs from non-school based groups visiting the monument throughout the year, and these can only occasionally be arranged as staffing permits.

Two special resource cave tours are also offered to caves that are otherwise not accessible to the public. Currently, this includes once-weekly tours of Crystal Ice Cave early December through late March, and once-weekly tours of Fern Cave mid-May through late October. Due to the sensitivity of the cave environments, difficult caving, and/or sensitivity of the interpretive material, these tours are only led by experienced interpretive staff.

The monument conducts a year-round Junior Ranger program for children between 5 and 13 years of age via a self-conducted Adventure Book that is reviewed with an interpretive ranger for a small award. Additionally, ranger-guided Junior Firefighter programs and Junior Lookout programs are offered occasionally during the summer season by Lava Beds National Monument fire management staff, as resources are available. Starting in summer 2008, the monument also hosted an annual Junior Ranger Day with special presentations and activities for children throughout the day. Finally, the monument website includes a “For Kids” page that directs young people to Junior Ranger and related resources.

Education Programs. The ability of Lava Beds National Monument to provide curriculum-based services

for education groups has fluctuated considerably over the past decade, in correlation with frequent staff turnover and the urgency of other divisional priorities. At current staffing levels, the equivalent of one-third of one full-time position is dedicated to the Education Program each year by an interpretive staff that is also responsible for a wide range of other duties. *The materials and programs now offered successfully present some subjects for students in a limited grade range, but services addressing other significant subjects and geared towards other grades are not available.*

The use of loan materials accounts for a significant portion of educational contacts made by Lava Beds National Monument each year. The five traveling education trunks currently available were developed to meet Oregon and California history, earth science, and life science curriculum standards generally for 3rd through 6th grades, and address the volcanic geology, cultural history of the area, the ecology of local birds, bats and the monument’s caves. These kits contain activities, lesson plans, hands-on materials, and audio-visual media to be used by teachers in the classroom. Most teachers use the trunks to prepare for a field trip to the monument, but they are occasionally requested for post-visit activities or by groups that are not able to make an on-site visit. Recent updates have made the trunks more suitable for these multiple uses, as well as aligning them with current curriculum standards and research.



The traveling trunks addressing local ornithology that recently became available through the Klamath Bird Observatory include lessons for all grade levels (kindergarten through 12th grade)—the only education service currently offered by Lava Beds National Monument specifically designed for early elementary and high school students.

Four on-site ranger-led programs are currently available to school groups. They address volcanic geology, cultural history, and fire ecology

at 4th through 6th grade levels per Oregon and California curriculum standards. These programs are intended to continue the learning process begun in the classroom, which ideally has included use of the traveling education trunks. The two available geology programs—a slide show in Mushpot Cave and a tour of Valentine Cave—tell the story of the Medicine Lake shield volcano and lava tube caves from inside a cave, and also introduce caving ethics to ensure safety and resource preservation. A guided walk through

Trail through Captain Jacks Stronghold

Captain Jacks Stronghold addresses the points of view of all participants in the Modoc War, reinforced by traveling through a landscape where two battles actually happened. A new fire ecology program developed in 2010 also introduces students to the ecological effects of a wildfire that occurred in the monument’s grasslands in 2008 as well as the challenges of land management to meet multiple natural and human goals. *Occasionally teachers and other group leaders request ranger-led programs on other topics and at other sites. With current staffing levels, these program requests cannot always be met, and generally with inappropriate ranger-to-visitor numbers.* All ranger-led programs contain a stewardship message and encourage awareness of the mission of the National Park Service.

Monument staff have led in-school ranger-led activities only sporadically in the last decade as staffing has allowed, and a limited number of programs were reintroduced in local elementary schools in fall 2008 on a variety of geology, history, and ecology topics loosely related to the in-park and trunk subjects. Although traveling trunks fill some of the needs for educational outreach for classes that cannot make an on-site visit, *the lack of ability to reach more classrooms in person constitutes a large gap in the current Lava Beds Education Program.* Due to ongoing budget constraints, many area schools face difficulties in funding field trips. The diverse student population in this region includes groups traditionally underserved by the National Park

Service, such as Hispanics, Native Americans, and low-income rural and urban youth. Providing outreach programs in schools would allow Lava Beds National Monument to reach these populations directly, and would create an invaluable opportunity to increase stewardship and support in gateway communities.

Teachers are involved to a limited degree in the development and update of educational services at Lava Beds. Traveling trunks include feedback forms, and teachers have an opportunity to give feedback after ranger-led programs. Two lightly attended Teacher Workshops held at the monument in fall 2005 and spring 2010 invited teachers to become more familiar with available materials, provide feedback for updates, and comment on future needs. In-classroom programs and the meetings with teachers that precede them have also increased local teacher knowledge of the resources and programs offered at Lava Beds. *Despite these attempts, teacher involvement in the Lava Beds Education Program is well below expectations set by Director’s Order #6 and the Centennial Renaissance Action Plan.*

NPS standards for education programs include a pre-visit lesson, on-site activity, and post-visit reinforcement of learning, all designed to support state curriculum standards; as well as learning based in student inquiry and direct experience as opposed to teacher- or ranger-directed lessons. *Although inquiry-based learning is beginning to be incorporated*

into programs and materials, very few classes complete a pre-visit lesson with a ranger or teacher, attend an on-site program with a ranger, and complete a post-visit lesson with a ranger or teacher. Increased staffing devoted exclusively to the Education Program is necessary to begin making this transition.

In summary, while the Lava Beds Education Program provides high-quality services in some areas, further development is needed to bring the program up to National Park Service standards and meet public demand. Approximately 45 percent of visiting students are in the age range served by current education services; Lava Beds has the staffing and material resources to provide about half of these students with loan materials or a ranger-led program.

Interpretive Media. Lava Beds National Monument has more than 40 wayside exhibits in addition to smaller interpretive and informational signs in the field. Interpretive content covers mainly geologic features and historic events of the Modoc War, though other panels touch upon pre-war cultural history (such as rock art), park wildlife and vegetation communities, air quality, and 20th century history. Smaller signs identify rock and vegetation types outdoors and lava tube features inside Mushpot, the monument’s one lighted and interpreted cave.

The last comprehensive wayside exhibit plan was completed in 1981, and most of the monument’s waysides are replacement copies



of panels designed and installed in 1987. However, significant updates and additions made in recent years have been informally comprehensively planned. This includes the 2005 replacement of eight panels at Modoc War sites to better interpret the story

Lava Beds NM,
Petroglyph Point Unit

of both sides, the replacement of 16 geology panels to include updated scientific information and modern graphics of volcanism in Hawaii completed between 2008 and 2010, and the addition of several panels to address the monument’s ecology. Most current wayside panels are exhibited in stone bases filled with lava rock, which fit appropriately into the landscape, but which are in increasingly deteriorating condition.

The monument currently provides three self-guided trails with brochures: Captain Jacks Stronghold, Petroglyph Point, and Gillems Camp. These brochures are relatively interpretive in style, partially filling in the gap created by a scarcity of personal interpretive programming offered in the north end of the monument, and are quite popular. Printing costs are subsidized by the Natural History Association.



Red-tailed Hawk

Lava Beds National Monument currently makes 26 site bulletins (specialty brochures providing in-depth interpretation of a subject) available to the visiting and non-visiting public. These range from basic information about self-guided caves and above ground sights to see, to in-depth historic and geologic background information and interpretation. The brochures are also available on the monument website. All printing costs are covered by donations from the Lava Beds Natural History Association.

Special Events and Community Outreach Programs. Although Lava Beds National Monument is not able to meet all community demands for participation in special events, fairs, and community meetings, there is currently significant special in-park and out-of-park programming and participation for a park of relatively small size.

The largest in-park special event, the Timeline living history event, occurs in May during years when staffing allows. This two-day event brings historic re-enactors from local groups, park staff, and tribal representatives together to operate stations throughout the monument where visitors can explore “stops in time” from different eras of Lava Beds National Monument history. Typically one day is open to visiting local school classes, and a second for the general public. This event receives excellent reviews for the ability to experience Lava Beds history first-hand on the landscape where

it happened. *There is much higher demand from local schools to participate in Timeline than can currently be met by this annual event that offers only one day dedicated to a limited number of classes.*

In recent years, Lava Beds National Monument staff has also been able to offer courses both in and out of the monument to participants in the annual Winter Wings Festival, a locally-organized event celebrating the migratory birds of the Klamath Basin.

The largest out-of-park special event that garners annual participation from Lava Beds National Monument staff is the Tulelake-Butte Valley Fair in September. This includes staffing a very busy booth for four days, with monument-related exhibits, videos, and children’s activities. This event promotes enormous knowledge about, and support for, the monument among the local population. Volunteers and staff from other divisions support booth staffing, as well as the design and display of a Lava Beds float in the fair’s parade. In addition to these annual events, the monument maintains a year-round display inside the historical museum at the fair-grounds. In recent years, Lava Beds National Monument has also sent unstaffed displays to several other fair-style community events, such as the Merrill Potato Festival and a horse packing/backcountry use show in Klamath Falls. Several new bulletin board panels are also maintained in the town of Merrill to garner local and tourist interest in visiting Lava Beds. Lava Beds staff, both from the

Interpretation and Resources divisions, are sometimes able to support other requests for outreach presentations and displays as staff is available. These have included a scholarly article and associated slide presentation for the Shaw Historical Library of the Oregon Institute of Technology in Klamath Falls, events for International Migratory Bird Day, the Tule Lake Migratory Bird Festival (coordinated by the Tule Lake National Wildlife Refuges), and the Audubon Society, and National Parks Day at the Science Center in Ashland. *Lava Beds National Monument has typically not had the staffing level to support other in- or out-of-park national events, such as Volunteers-in-Parks recognition events that occur simultaneously throughout the NPS.*

In general, Lava Beds interpretive staff, with significant contributions from members of the Resources division, participates in a moderate number of in-park and community outreach activities, but there is considerable room to grow to meet demand and increase local support. This important “third foundation” of interpretation (along with visitor and education services) should continue to expand in the future, especially in coordination with neighboring agencies and tribes to bolster a perspective that supports both the ecological and sociological continuity of the Klamath Basin’s people and lands.

Accessibility and Special Populations. *Lava Beds offers limited opportunities for those with impaired hearing, sight,*



Entrance to Mushpot Cave

mobility, and cognitive function, and some services for people with difficulty understanding English. Some additional accommodations beyond what is currently available at Lava Beds National Monument are required by NPS standards so visitors of all abilities and backgrounds can fully access interpretive opportunities. As directed by the standards of the Interpretive Development Program, all interpretive contacts are modified to best meet the physical and cognitive abilities and knowledge base of each visitor to the greatest extent possible.

By the nature of the rugged volcanic terrain, most natural areas of Lava Beds National Monument are not easily accessible to visitors with

physical impairments, especially cave environments that require entrance descents and contain rough lava floors. However, some developed areas offer access to disabled visitors. The Visitor Center contains exhibits, some bookstore shelving, and a portion of the front desk at wheelchair height. Most wayside exhibits and bulletin board displays in the field are located on low-graded pavement. Additional modifications in 2008 have provided wheelchair ramps from all parking areas to service areas and exhibits. Interpretive programming available to the mobility-impaired includes evening slide programs and porch talks at the Visitor Center. Some easier caves and relatively level, short hiking trails may be accessible for those with mild mobility impairment,

including ranger-guided interpretive programs offered in these locations. One self-guided trail at Petroglyph Point travels along a level, relatively smooth natural rock surface, which may be accessible to some using wheelchairs. Additional visitor services such as an ADA-compliant campsite, restrooms, and one picnic area are also available throughout the monument, although all doors must be manually opened.

Although the exhibits in the Lava Beds Visitor Center include many tactile displays and audio stations of benefit to the hearing impaired, there are currently no assistive materials in Braille. Generally, *a severely sight-impaired visitor would need assistance from a sighted person to fully experience the exhibits.* This is especially true of all non-personal interpretive services outside the Visitor Center such as wayside exhibits, bulletin boards, and site bulletins, which depend entirely on written material. *The 15-minute introductory video, though it includes audio narration, also lacks an audio description track (an additional track which describes the visual content of video programs, typically listened to on a headset). Additionally, the website lacks an audio component to narrate its written content.* Generally, a sight-impaired person could independently enjoy the orally-presented portion of a stationary interpretive program such as an evening slide program or porch talk, but may need assistance from another person to attend a guided cave tour or other guided walk of appropriate difficulty.

All written interpretive materials throughout the monument and on the Internet are of benefit to hearing-impaired individuals who can read. However, *the current introductory park video is not closed-captioned. NPS standards also encourage sites to include assistive listening devices (headsets that narrate audio-visual programming at increased volume) as well as to provide interpreters fluent in sign language.* Currently, neither of these services is available, and personal communication with hearing-impaired visitors occurs either through writing or a companion who can sign.

Lava Beds National Monument strives to provide appropriate informal interpretation to cognitively-impaired adults. Sometimes these visitors enjoy participating in the Junior Ranger program. The monument also receives moderate visitation from those who are not fluent in English. Though many visitors speak English as a second language, the monument's visitors include Spanish speakers from the local area, and Asian-Americans on tour buses from the San Francisco area (most of whom speak Cantonese or Mandarin). Lava Beds permanent staff currently includes one person fluent in French, and seasonal staff in recent years have included rangers fluent in Spanish, German, and Hebrew, allowing occasional personal interpretive services in a visitor's native language. In 2008 and 2009, volunteers translated a general orientation brochure into Spanish, traditional and simplified Chinese,

German, French, and Japanese. These written materials have begun to fill in some gaps for visitors speaking the most common foreign languages. The NPS also has plans to add Spanish translations of some portions of all park websites.

However, materials in additional languages are not available on the monument’s website, and Lava Beds does not actively recruit interpretive staff fluent in languages other than English, particularly Spanish.

Personnel. The park’s core interpretive staff includes a Chief of Interpretation (Chief Park Ranger) who is also responsible for the law enforcement and fee collection functions, a Lead Interpreter, an Education Coordinator, a Visitor Use Assistant and an Interpretation Park Guide. In addition to one NPS-funded SCA intern, the Lava Beds Natural History Association provides two SCA interns per year. The number of seasonal interpreters varies depending upon funding, but has varied between two and four in recent summer seasons, with additional staff (seasonal and intern) typically totaling six persons.

Among other duties, staff responsibilities include the following: **The Chief of Interpretation** is responsible for management and overall direction of all aspects of the Interpretive and Education branches of ranger activities, including both short and long range planning efforts. The Chief directly supervises all staff in both Interpretation and Education.

The Lead Interpreter schedules programs, manages day-to-day operations, and develops wayside and other exhibits and interpretive media.

The Education Coordinator (currently classified in the Interpretive Park Ranger series because of many other duties serving the visiting public) schedules education programs, develops educational materials for teachers and rangers, assists teachers in planning field trips, manages the volunteer program and acts as lead interpreter for the Tule Lake Unit.

The Visitor Use Assistant manages the fee program throughout the year. In summer, with the help of seasonal park guide staff, s/he operates the contact station at the north end of the park. In the winter, s/he helps staff the Visitor Center.

The Interpretation Park Guide assists the Natural History Association with inventory and stocking, covers the Visitor Center front desk, and performs other logistical duties.

Partnerships

Lava Beds National Monument participates at a moderate level with local public, private, and non-profit partners. These include attendance at local meetings of Rotary International, the Answer People (a group supporting tourism in the Klamath Basin), and the Volcanic Legacy National Scenic Byway (part of which runs through the monument), as well



as cooperative efforts with the Lava Beds Natural History Association.

While the Tule Lake National Wildlife Refuge and Modoc National Forest have contiguous ecosystems with Lava Beds National Monument on both the north and south boundaries and much potential crossover in interpreting geology and ecology, interpretive staff coordination is limited by the staffing levels, time constraints, and funding levels within all three agencies.

Monument interpretive staff has coordinated seasonal training sessions and participation in the Timeline living history event in recent years with representatives of the Klamath Tribes (of which one Modoc band is a part). *However, there is significant opportunity to work with the tribes on a more extensive level in order to present a tribal perspective in interpretive programming and non-personal interpretation, which is largely lacking from current services.*

This could also include personal services presented at the monument by tribal members themselves, by NPS staff members and/or at additional special events or programs. Limited coordination has also occurred in the past with the Klamath County Parks on historical special events.

Issues and Influences Affecting Interpretation

This section includes influences and opportunities inside and outside the monument, resource-based issues, and internal issues that affect interpretation and education. Collectively, it reflects the perspectives of Lava Beds National Monument upper management, as well as staff members and stakeholders.

ISSUES

- Funding for school field trips has decreased significantly, creating unmet educational needs in the area.
- Staffing levels and funding remain stable, but need to increase in order to meet future needs and goals.
- The monument is only easily accessed by private vehicle, and it is quite a long distance from any town that offers amenities.
- The monument itself offers few amenities: no food service, gas, or overnight accommodations except for the campground.
- The Forest Service does not have adequate funding for infrastructure or interpretive media maintenance.
- Multiple access points create

Wife of Modoc Henry A – Klamath, Courtesy Library of Congress



- orientation challenges.
- The remote location keeps visitation low, as well as impacting the monument’s ability to attract interpretive partners, concessionaires, and volunteers.
 - Limited housing and remote location impact staffing, especially for seasonal employees and Student Conservation Association interns.
 - The monument’s isolated location makes cell phone coverage spotty throughout the site. This limits a potential interpretive medium, and reduces visitors’ connectivity with the rest of the world.
 - The 47,000 surface acres of the

monument, plus eight miles of facilitated cave passage, and at least 30 miles of unfacilitated cave passage create complex programming challenges.

- ADA access to all of the caves and most of the trails is not feasible because of the rugged terrain.
- The monument has a small co-operating association, the Lava Beds Natural History Association, but lacks a friends group.

OPPORTUNITIES

- The monument has experienced a steady increase in attendance in recent years, presumably in part due to visitors

- focusing leisure time activities on nearby, lower cost attractions.
- Heritage tourism – both cultural and natural – is on the rise nationally.
 - There is a growing interest and demand on the part of the public for living history activities. Re-enactment groups are available to assist Lava Beds National Monument with this type of programming.
 - Wildlife tourism, the nearby wildlife refuges, and area special events centered on birding create a significant fall audience for Lava Beds National Monument, and provide partnering opportunities with the Fish and Wildlife Service.
 - Mutual interests and shared interpretive themes create opportunities to partner with Modoc National Forest, while taking into consideration limited staff capacity.
 - There is an opportunity to engage the public in habitat restoration projects and special wildlife stewardship programs.
 - Cooperation with other area national parks makes possible events like Northwest National Park Day that focus on underserved audiences, especially youth, as well as other programs.
 - The monument’s remote location makes it ideal for dark night sky programs and star-watching.
 - The popularity of winter sports in and near the monument on adjacent public lands provides an opportunity to reach additional audiences with interpretive and stewardship messages.
 - A new climbing group that visits

- the park could grow in the future, providing support for park stewardship and resource protection.
- Cave use is increasing in the monument, creating opportunities for cave-specific interpretation for cavers of all levels of expertise.
 - The trend toward the use of social media to communicate with park constituents brings new opportunities, although not without cost.
 - The growing availability and affordability of digital media may help the monument address some of its ADA challenges through virtual experiences and the like. These same technologies can provide virtual access to resource-sensitive places that could otherwise not be made available, as well as distance learning opportunities for a wide variety of constituents.
 - The monument’s website, already a rich source of information on park themes, provides ongoing opportunities to provide new content, including images, video, wildlife webcam feeds, and virtual tours.
 - A partnership with Oregon Institute of Technology in nearby Klamath Falls may provide opportunities to develop new interpretive media such as virtual cave tours based on 3D cave modeling.
 - The monument’s remote location, multiple access points, and need for visitor orientation make it an ideal candidate for the creation of a Smart Phone application to interpret park features.



- While cell service in the monument is unreliable at present, it will in all likelihood improve in the future, both in park and out of the park.
- The monument’s wilderness provides opportunities for solitude and interaction with nature.
- The monument’s features and resources make it ideal as a spring board for the discussion of important current issues such as climate change.
- A great deal of current attention is focused nationally on “Nature Deficit Disorder” among children. Programs like “No Child Left Inside” (NCLI) create opportunities

for Lava Beds National Monument to seek funding to provide outdoor recreation and environmental education programs for youth. This is also an emphasis of NPS upper management.

- The state of Oregon is developing new environmental education curriculum standards, and California has new ones in place, providing opportunities for the monument to continue to meet education needs of area schools.
- There are opportunities to create new educational partnerships at all grade levels including college, with schools and other groups both local and distant, who do not currently work with Lava Beds National Monument.

- Some recent candidates for seasonal interpretive positions are presenting with better interpretive skill sets due to an increase in the number of interpretation and parks management degree programs. Candidates’ skill sets also frequently include new technologies, including social media.
- There is an opportunity to create stronger linkages between re-search in the park and interpreta-tion, and to interpret research findings to the public.
- Funding requirements for scientific research often include an interpretive element as a way of sharing findings.
- Potential new interpretive spaces planned for the park will create new interpretive opportunities.
- There is an increasing emphasis nationally on volunteer opportu-nities (although the IRS has recently implemented policies that make it more difficult to provide financial support for the expenses of low-income volunteers).
- The upcoming National Park Service Centennial in 2016 will continue to focus additional attention on park resources, programs, and activities.
- The Natural History Association has the opportunity to grow and potentially expand its scope.
- Social media open the possibility of creating a Friends group composed not only of old and new area residents but also “virtual” Friends who could provide support from afar. One

example: wildlife photographers who visit the park but do not live nearby.

CONCERNS

- There is a need to serve a more diverse audience, including those in the area who live in poverty.
- Monument staff have no control over false or inappropriate information about the site that appears on the internet on such sites as Facebook, YouTube, etc., and too few resources to counteract this inadequate information officially.
- There is a need to recruit qualified staff members who are ethnically diverse to better connect with a wider range of visitors.
- Visitors’ average age is increasing; this is not a sustainable audience over the long run. Some older visitors have different leisure preferences and access requirements.
- The natural and cultural resources of the monument are non-renewable.



- There is a need for a strong conservation message about the multitude of fragile resources contained within the monument, including caves, cultural resources, wildlife, especially bats, vegetation and geology.

SPECIAL CONCERNS ABOUT CAVES:

The caves at Lava Beds National Monument create a number of resource management and interpretation challenges:

- Exploration and enjoyment of the caves offer one of the monument’s greatest recreational experiences – and one of the most difficult interpretive challenges.
- Mass bat flights are among the monument’s most spectacular events, but sharing them with the public may endanger the bat population.
- There is a need for clear guidelines on good cave stewardship that are understood by the majority of cave enthusiasts in the monument.
- Different messages are appropriate for experienced, committed cavers, and recreational cavers.
- Less experienced cavers would benefit from educational messages and guidance before they attempt to access caves on their own.

Visitation

In 2009, the number of visitors to Lava Beds National Monument totaled 129,639, an increase of nearly

20,000 visitors from the year before. The monument has consistently hosted more than 100,000 annual visitors since 1992. Peak visitation is between May and September, with the highest attendance in the months of July and August, with over 20,000 visitors each.

Virtual Visitors. During the period from August 2008 to August 2009, the Lava Beds National Monument website received nearly 62,000 hits, with nearly 94,000 individual page views. Heaviest usage was in May, June and July, with over 7,000 hits per month. This probably reflects potential visitors using the website to help plan summer vacations.

The greatest number of hits within the website were for the “Directions” (31,747 hits) and “Things to Do” (25,392) pages, followed by the “Photos/Multimedia” entry page (25,342 hits). Average dwell time on each page accessed was over a minute, with visitors enjoying the photo gallery for an average of almost two minutes (1:59). The longest average dwell time occurred with the “Plan Your Visit/Brochures” page (4:14).

Audience Characteristics

A recent visitor study was conducted in May and June of 2007 over a holiday weekend at the beginning of summer. At that point in time (which may not be characteristic of the rest of the season), the following visitor characteristics at Lava Beds National Monument were identified:

- Fifty-one percent of visitor groups were in groups of two and 16% were in groups of five or more. Sixty-six percent of visitor groups were in family groups.
- American visitors were from California (47%), Oregon (26%), Washington, (8%) and 18 other states. International visitors, comprising 9% of the total visitation, were from Germany (13%), the United Kingdom (8%), and 11 other countries.
- Forty-eight percent of visitors were ages 41-70 years and 35% were ages 30 years or younger.
- Seventy-three percent of visitors visited the park once in their lifetime.
- Prior to this visit, visitor groups most often obtained information about Lava Beds National Monument through maps and brochures (44%), the park website (41%), and friends/relatives/word of mouth (34%). Nine percent of visitor groups did not obtain any information about the park prior to their visit.
- Of those visitor groups who spent less than 24 hours at the park, 33% percent stayed up to six hours. Of those that spent more than 24 hours in the park, 41% stayed for two days. The average length of stay was 14.4 hours.
- Regarding lodging that visitor groups used during their stay, 82% stayed in a campground in a tent or RV inside the park, and 17% stayed in a lodge, hotel, motel, or cabin outside the park.
- Most visitor groups (95%) were able to obtain needed support

services from communities in the area (with 60 miles of the park). Over one-half (60%) obtained services in Klamath Falls.

- The average group expenditure within and outside the park (within 60 miles of the park) was \$206, with a median (50% paid more and 50% paid less) of \$113. Average total expenditure per person was \$71.
- Most visitor groups (93%) rated the overall quality of services, facilities, and recreational opportunities at Lava Beds National Monument as “very good” or “good.” Less than 1% of visitor groups rated the overall quality as “very poor” or “poor.”





Recommendations

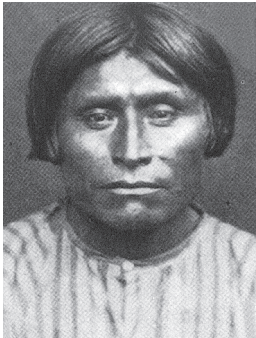
The following is a description of program and media recommendations designed to further define, support, and communicate the park’s mission, purpose, significance, primary and secondary interpretive themes, and visitor experience goals. Implementation of these recommendations will help ensure that all audiences (general, recreational, curriculum-driven and virtual) are well prepared and informed, and that they will be able to develop meaningful connections with tangible and intangible resources and with the site’s themes and stories.

The recommendations are presented in a framework that identifies **short-term (1-3 years), mid-term (3-5 years) and long-term (5-10 years)** goals, with High, Medium and Low priorities within each time frame. The recommended interpretive services include ongoing programs and products that are already in place at the site.

A summary of all recommended services including high, medium and low priorities across all three time-frames, as well as potential funding sources, is presented below.

The recommendations assume that staffing levels for Interpretation and Education will remain at current levels for at least the next five years. Recommendations for all time frames will need to be adjusted annually based on available resources, including both funding and staff capacity.





Kintpuash, known as Captain Jack

Personal Services

Short-term Priorities. Recommendations for the immediate future rely heavily on personal interpretive services. Existing evening programs on all eight themes should be expanded, with special emphasis on night sky programs, taking advantage of the exceptional quality of darkness offered at the monument. Existing programs on ecology should be expanded to address fire ecology, cave ecology, and non-native species, along with new publications on these topics.

The site should seek additional partners over the next five years to help expand living history programs, not only the popular annual Timeline event, but other living history presentations as well.

Funding should also be sought to allow for more guided tours of important site resources, such as the new geology trail proposed in the preferred alternative of the GMP, Petroglyph Point, and Captain Jacks Stronghold. Guided tours of the special resource caves Fern and Crystal Ice should continue to be offered while the site seeks funding to add tours of additional caves, if feasible with appropriate conservation measures.

Finally, offsite outreach programs to schools should continue to be developed to present Themes 1 (caves), 2 (Modoc War), 4 (ecology) and 6 (geology).

Mid-term Priority. The highest mid-term priority for personal inter-

pretive services calls for increased tribal partnership in the development of programs interpreting Native American themes. This initiative is wide-ranging, and includes seminars, distance learning strategies, ethnographical research, and outreach offsite.

Long-term Priority. Monument staff, including Interpretation and Education as well as Resource Management, will carefully explore the possibility of offering certain members of the public opportunities for participation in archaeological research, as well as other resource-based research. Audiences for this service would be mainly college students, but some recreational users of the park may also have an interest in volunteer research positions.

Publications

Short-term Priorities. Publications addressing fire ecology, cave ecology, and non-native species will be developed in the short-term. Reviewing and updating existing trail guides at Captain Jacks Stronghold, Gillems Camp, and Petroglyph Point are also a priority.

Over the mid- and long-term, priorities shift away from publications toward development of new media services.

New Media

With traditional programming and publications updated, the Interpretation and Education Division will turn



its attention to the development of new kinds of media, targeting their delivery in three to five years.

Mid-term Priorities. Goals for the production of digital media include:

- Create a 3D model/virtual tour with animation, and an interactive museum exhibit or other new media to interpret volcanic activity in the park. The first step offers a partnership opportunity: installation of a webcam from Hawai'i Volcanoes National Park that will show live action shots of the same type of lava flow that occurred at Lava Beds National Monument. The monument will partner with the Oregon Institute of Technology in Klamath Falls to develop the 3D modeling elements of the program.

- Investigate the potential to install wildlife webcams, including new media used to educate the public about sensitive wildlife populations. The webcam could be accessible in the visitor center or on the website, and should be carefully planned so as to protect the bat caves from unwanted attention.
- Create and provide distance learning programs that address theme 1 (caves), 2 (Modoc War), 3 (Native American culture) and 7 (pre-monument history). These programs also offer partnership opportunities, and could be made available to educational audiences at all levels from third grade through college.
- Create a 3D virtual cave tour in partnership with the Oregon Institute of Technology. While

Schonchin Butte

many visitors will be interested in a virtual cave tour, it will be especially useful for those with impaired mobility.

Long-term Priority. Over the long term (five to ten years), new media production will center on interpreting archaeological and cultural materials. Initiatives will include 3D modeling of rock art that will be available on the park website, as well as on the Visitor Center media station.

Traditional Interpretive Media

Mid-term Priorities. These include making oral history accounts available to interpret theme 7 (pre-monument history) and 8 (park development), for example, via audio stations like those currently in the Visitor Center exhibit, as well as a complete makeover of the existing interpretive media in Mushpot Cave.

Wayside Exhibits

The monument’s recent wayside signage upgrade has created an effective network of outdoor interpretation. Although a few additional waysides would be useful, these are of lower priority than other interpretive services at this time , with the exception of repairing or replacing aging rock wayside bases.

Education Program

Many additional educational services will be provided to school audi-

ences over the next ten years. These include:

Third- to Sixth-grade and Junior-Senior High School Curriculum-Based Programs. Curriculum-based programs are scheduled to come on line throughout the course of the ten-year plan.

Short-term Priorities. Onsite and offsite programs will be developed at all grade levels, including:

- Increased capacity to offer living history programs, including Timeline
- Curriculum materials in support of the night sky program
- Expansion of guided walks at the Stronghold and Petroglyph Point, as well as geology walks. The upgrade to existing trail guides will also support school class visits.
- Programs and curriculum materials addressing the monument’s ecology theme. This is the monument’s only program that would target Pre-K through second grade levels. These are the only grade levels currently not receiving these types of programs. The focus for younger children would be on developing an appreciation and concern for the environment.

Mid-term Priorities. Many of the interpretive services listed above and slated for development in the next three to five years will support school curricula. These include:

- 3D modeling, virtual tours, and animated programs interpreting

- volcanic activity and cave ecology
- New interpretive media in Mushpot Cave
- Oral history interpretation
- Distance learning programs
- Increased programming provided by tribal representatives

Long-term Priority. In the long term, school classes studying Native American topics will benefit from new media presentations on archaeological and cultural materials.

College Classes. Monument interpreters plan to reach out to college and university professors to encourage class visits to study various park-related topics. The programs could also be offered offsite and via distance learning technology. Topics include:

- Night sky programs
- Ecology-centered programs, including fire ecology, cave ecology, and non-native species

Special Populations

The rugged terrain of the monument, including cave interiors, severely restricts access for visitors with mobility impairments. Several of the planned new media programs will be of particular benefit to this audience. Simulated volcanic and cave environments replicate actual experience to a certain degree.

Other planned services that will help meet ADA requirements include:

- Webcams and videos featuring monument wildlife

- Photos and collection object information available via the monument website and at an electronic kiosk in the Visitor Center
- Smart Phone applications that provide audio and text versions of site interpretation
- Consideration of wayside signs at Petroglyph Point that offer tactile reproductions of rock art

Outreach to Underserved Constituencies

Underserved audiences for Lava Beds National Monument include young people (teens and twenties), the area’s large Latino community, and Native American residents. The region is characterized by pockets of poverty, creating outreach challenges and opportunities.

Many of the recommendations listed above will target young audiences, and recommendations to enhance family activities in the monument may help create future audiences. Recruitment of minority audiences will require carefully targeted services. These include:

- Begin with a consistent approach and small steps that will encourage a comfort level with the agency and the environment of the monument.
- Create larger picnic grounds and gathering places and other amenities to welcome large traditional extended families.
- Present more Petroglyph Point programs near the large social



The Peninsula, a rock formation near Petroglyph Point

- spaces proposed in the GMP’s preferred alternative.
- Translate more site bulletins, and print a Spanish-language brochure
 - Create Spanish-language posters/announcements for posting in the community.
 - Reach adults through their children by offering school children special passes that may bring them back to the monument with their families.
- Hire Spanish-speaking front desk staff from the local area, perhaps high school students.
 - When cell service improves, consider Spanish-language cell phone interpretation targeted to this audience.
 - Since the Tulelake Fair Booth attracts a good audience of Latino children, considering adding more activities for adults.

Partnership Opportunities

The Monument enjoys a number of successful partnerships at present, and there is great potential for others.

PARTNER(S)	PROGRAM	STATUS
Participants in Timeline (living history volunteer groups)	Timeline plus new living history opportunities	Ongoing, but expansion is a high priority for the short term (1-3 yr.)
Members of the Klamath Tribes	Interpretive programming presented by tribal members, including talks, seasonal training, etc.	Ongoing, but attempts to strengthen the partnership should take place within the next 5 yrs.
Members of the Klamath Tribes	Seminars, distance learning, ethnography and offsite outreach to tribal members	A high priority within the next 3-10 yrs.
Caving organizations (e.g., Cave Research Foundation, National Speleological Society)	Social media (YouTube, Twitter, etc.) as tool for teaching resource protection & cave stewardship	To be determined
Caving organizations (e.g., Cave Research Foundation, National Speleological Society)	Coordinate & present caving seminars for different levels of expertise	To be determined
Hawai’i Volcanoes NP	Install webcam at Lava Beds of lava flow at Hawaii Volcanoes NP	A high priority within the next 3-10 yrs.
Colleges and universities	Distance learning programs addressing caves, the Modoc War, Native American culture and pre-monument history	A high priority within the next 3-10 yrs.
Colleges and universities	Service projects, including Citizen Science	May be established within the next 3-10 yrs.
Oregon Institute of Technology	Create 3D modeling/virtual cave tours	A high priority within the next 3-10 yrs.
Oregon Institute of Technology	Create 3D model of the Stronghold	To be determined
Oregon Institute of Technology	Create 3D laser map/virtual rock art interpretation	To be determined

PARTNER(S)	PROGRAM	STATUS
Modoc NF, Tule Lake NWR, Klamath Falls Chamber of Commerce, and others	Smart Phone application to interpret the Klamath Basin	To be determined
Modoc NF, Tule Lake NWR, Klamath Falls Chamber of Commerce, and others	Smart Phone application to interpret Lava Beds plant & animal communities	May be developed within the next 5-10 yrs.
Parks, sites & museums that share Native American themes	Distance learning, shared resources, exhibit exchange	To be determined
Conservation organizations, hiking clubs, etc.	Coordinate seminars & activities on resource-based current issues	To be determined
Scenic Byways programs	Produce Hwy 139 wayside sign to interpret the Medicine Lake Volcano	To be determined

Interpretive Infrastructure

Development of new services and maintenance of existing ones require several types of support for interpretive and educational programming. These include staffing and training, support materials, equipment, and financial support for new and continuing initiatives.

Staffing and Training

- Training for all interpretation employees on new technology
- Training for staff members in education and/or someone with that background or capability hired
- Time to develop and maintain website and other new media
- Staff time devoted exclusively to education and outreach programs and partnerships

Support Materials

- Resource and research materials are adequate at the monument, but interpreters do need enhanced access to information about and images of the park’s collection objects.
- “Consumables” for living history: reproductions, period costumes, etc.

Equipment

- Acquire new technology/equipment, especially for distance learning initiatives
- Astronomy materials and equipment to sustain night sky program and serve more people
- A portable version of the planned Visitor Center media station that can be transported for outreach opportunities
- Portable trade display for outreach

- Sustain and maintain wildlife webcam equipment.
- Support to turn wildlife webcam into a more interpretive medium
- Transportation, vehicle, gas mileage, laptop, projector, over-night travel, etc., to support offsite programs
- Support to travel to colleges for staff and audience recruitment

Financial Support

- New classrooms called for in the new General Management Plan to support seminars, distance learning, public programs, and education
- Resources to 1) refresh teacher resource/trunks, and 2) support offsite programs, existing and new
- Resources to support more tribal involvement
- Transcription, editing, and additional support for oral history-based interpretation of local history themes
- Support for interpretive use of modeling/simulation/virtual tours

SUMMARY OF IMPLEMENTATION PLAN

The following is a summary of the action items and interpretive services proposed as part of this long-range interpretive plan. Services are listed by priority band (high, medium, low), and are also listed in order of their priority within each band. Higher priority items are described in greater detail in the narrative sections of the document (see above). The summary list will guide development of annual interpretation plans and implementation strategies for the next ten years.

Two additional summary tables follow, grouped by type of interpretive service and by type of audience.

IMPLEMENTATION SUMMARY: Short-term, mid-term & long-term recommendations by priority (High, Medium, Low)

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Short-term (1-3 years) and Short-to Medium-term (1-5 years)							
Provide evening programs	Existing/New	Short	High	All themes	General Recreational Virtual	ONPS, 80%, 20%	Ongoing as needed
Provide living history (existing and beyond Timeline)	Existing/New	Short – Medium	High	Theme 2, 3, 7 & 8 : Modoc War, Native American culture, Pre-monument History, Park Development	General Recreational Curric: 3-6 grade (3-6), Jr-Sr High (H), College (C) Virtual	VIP, PAC, 80%, ONPS	Ongoing, Explore, Expand
Provide night sky programs Incl. light and air pollution, green technology, climate change (Could be evening programs, media station, porch talk, curriculum materials)	Existing/New	Short	High	Theme 5 & 6: Wilderness, Ecology	General Recreational Curric (3-6, H, C) Virtual	ONPS, 80%, 20%, PAC	Ongoing as needed
Provide guided walks Including new geology trail, Petroglyph Point and Stronghold	Existing/New	Short - Medium	High	Theme 2, 3 & 4: Geology, Modoc War, Native American culture	General Recreational Curric (3-6, H)	ONPS	Seek funding
Produce onsite ecology programs & publications Including fire ecology, cave ecology, non-native species	Existing/New	Short	High	Theme 6: Ecology	General Curric (Preschool-C)	ONPS, PAC	Ongoing as needed
Review & update all existing trail guides Including Stronghold, Gillems, and Petroglyph Point	New	Short – Medium	High	Theme 2, 3 & 7: Modoc War, Native American culture, Pre-monument History	General Recreational Curric	ONPS, 80%, NHA	Seek funding

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Short-term (1-3 years) and Short-to Medium-term (1-5 years) (CONTINUED)							
Create and provide offsite programs	Existing/New	Short - Medium	High	Theme 1, 2, 4 & 6: Caves, Modoc War, Ecology, Geology	Curric (Preschool-C)	PAC, 80%, OFS	In process, began planning
Provide guided tours of Fern Cave and Crystal Ice Cave at existing levels	Existing	Short - Medium	High	Theme 1 & 3: Caves, Native American culture	General Recreational Curric (3-6, H)	ONPS	Ongoing
Provide more developed cave tours (more caves, more seasons)	New	Short	High	Theme 1: Caves	Recreational	VIP, OFS, ONPS	Seek funding
Create and provide ranger programs not including evening programs & guided walks	Existing/New	Short	Medium	Themes 2, 3, 4, 5 & 7 : Modoc War, Native American culture, Geology, Wilderness, Pre-monument history	General Recreational Curric (3-6, H) Virtual	ONPS, PAC, 80%, 20%	Ongoing as needed
Develop museum exhibit on resource protection	New	Short - Medium	Medium	Theme 1: Caves	General Recreational Curric (All) Virtual	Exhibit Cyclic	In Process, Explore additional
Host interpretation by tribal members (including seasonal training, education programs, talks)	Existing	Short - Medium	Medium	Theme 2 & 3: Native American culture, Modoc War	General Curric (3-6, H, C)		Explore
Produce brochures on wilderness ethics/ camping	New/Existing	Short – Medium	Medium	Theme 5: Wilderness	General Recreational Curric (3-6, H, C)	20%, ONPS	As needed
Increase roving interpretation in caves	Existing	Short	Medium	Theme 1: Caves	General Recreational	VIP, OFS	Seek funding
Social media (YouTube, etc)	New	Short	Low	Theme 1: Caves	Curric (3-6, H) Virtual	PAC, 20%	Seek funding

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Funding
Medium - (3-5 Years) and Medium - to Long-Term (3-10 Years)							
Create new media including 3D modeling/ virtual tour w/animation, interactive museum exhibit or other new media (ex: webcam of Hawaii Volcanoes NP)	New	Medium - Long	High	Theme 4: Geology	General Recreational Curric (via DVD) Virtual ADA	20%, NRPP, Exhibit Cyclic	Explore
Increased tribal partnerships including seminars, distance learning, ethnography, offsite outreach	New	Medium - Long	High	Theme 2 & 3, Modoc War, Native American culture	General Curric (3-9, H, C)	VIP, ONPS	Explore
Develop interpretive media using oral histories Includes collection of oral histories	New	Medium - Long	High	Theme 7 & 8: Pre-monument history, Park development	General Recreational Curric (3-6, H, C) Virtual	ONPS, Exhibit Cyclic, 80%	Ongoing, Began Planning
Create and provide distance learning programs	New	Medium - Long	High	Theme 1, 2, 3 & 7: Caves, Modoc War, Native Am. culture, Pre-monument history	ONPS Exhibit Cyclic, 80% Virtual	PAC, YPP, 20%, 80%	Explore
Develop and produce new interpretive media for Mushpot Cave	New	Medium	High	Theme 1: Caves	General Recreational Curric (3-6, H, C) Virtual	Exhibit Cyclic,	Began Planning
Create a 3D model virtual cave tour	Virtual	Medium - Long	High	Theme 1: Caves	General Curric (3-6, H, C) Virtual ADA	Exhibit Cyclic, 20%, NRPP	Explore
Assess, interpret and install natural resources remote cams including wildlife cams, air quality, etc.	New	Medium - Long	Medium	Theme 5 & 6: Wilderness, Ecology	General Recreational Curric (P-C) ADA Virtual	20%	Explore

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Funding
Medium - (3-5 Years) and Medium - to Long-Term (3-10 Years) (CONTINUED)							
Develop online and new media using Modoc war collection including online and other new media and teacher resources, media station	New	Medium - Long	Medium	Theme 2: Modoc War	General Recreational Curric Virtual	20%, Exhibit Cyclic, CRPP	In Process, Explore
Produce guides & maps for popular caves	New	Medium - Long	Medium	Theme 1: Caves	General Recreational Curric	NRPP, 20%, VIP	In progress/ seek addl. Funding
Create opportunities for service projects and citizen science	New	Medium - Long	Medium	Theme 1 & 6: Caves and Ecology	Recreational Curric (H, C)	VIP, NRPP	Explore
Interpret historic landscape and/or produce web exhibit of collections/historic photos	New	Medium	Medium	Theme 8: Park development	General Recreational Curric (3-6, H) Virtual	ONPS, Exhibit Cyclic	Began Planning
Develop new or adapt existing trail to become a self-guiding geology trail	New	Medium	Low	Theme 4: Geology	General Recreational Curric Virtual	20%	Explore
Establish web or museum exhibit using photos and items in archived collection	New	Medium - Long	Low	Theme 7: Pre-monument history	General Recreational Curric (3-6, H, C) Virtual ADA	Exhibit Cyclic, ONPS	Explore
Create 3D model of Stronghold	New	Medium - Long	Low	Theme 2: Modoc War	General Recreational Curric Virtual ADA	Exhibit Cyclic, 20%, NRPP	Explore
Develop smart phone app about caves using remote or bar code scan at cave entrances	New	Medium - Long	Low	Theme 1: Caves	General Recreational Virtual	20%	Explore

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Funding
Medium - (3-5 Years) and Medium - to Long-Term (3-10 Years) (Continued)							
Partner w/other parks, sites, museums, etc., that share Native American history	New	Medium - Long	Low	Theme 2: Modoc War	Recreational Curric Virtual	20%	Explore
Coordinate seminars and activities on resource-based current issues with hiking clubs and other organized groups	New	Medium - Long	Low	Theme 5 & 6: Wilderness and Ecology	Recreational Curric (3-6, H, C)	20%, PAC	Explore
Long-Term (5-10 Years)							
Produce new media using archaeological/cultural materials including rock art on website, media station, etc.	New	Long	High	Theme 3: Native American culture	Recreational Curric (3-6, H, C) Virtual	Exhibit Cyclic, 20%, PAC	Explore
Provide opportunities for public participation in archaeological research	New	Long	High	Theme 3: Native American culture	Recreational Curric (C)	ONPS, PAC	Explore
Develop smart phone app about plant and animal communities and fire (including sounds such as bird calls)	New	Long	Medium	Theme 6: Ecology	General Recreational Curric (3-6, H, C in classroom) Virtual	20%, PAC	Explore
Coordinate caving seminars for different levels of expertise	New	Long	Low	Theme 1: Caves	General Recreational Virtual	20%, PAC	Explore
Create 3D laser map or other type of virtual rock art interpretation	New	Long	Low	Theme 3: Native American culture	General Recreational Curric (3-6, H, C) Virtual ADA	CRPP	Explore

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Funding
Long-Term (5-10 Years) (Continued)							
Develop smart phone app about wilderness (soundscape, ethics, etc)	New	Long	Low	Theme 5: Wilderness	General Recreational Curric (3-6, H, C) Virtual ADA	20%, PAC	Explore
Assess and provide more tours of special resource caves (e.g., Post Office Cave)	New	Long	Low	Theme 1: Caves	Recreational		Explore
Improve maps and information about sites outside park in consultation with tribes, other agencies, and landowners	Existing	Long	Low	Theme 2: Modoc War	Recreational		As needed
Produce tactile petroglyph wayside (and tactile versions for traveling trunk)	New	Long	Low	Theme 3: Native American culture	Curric (P, 3-6) ADA		As needed
Produce wayside along Hwy 139 that interprets the Medicine Lake Volcano	New	Long	Low	Theme 4: Geology	General		As needed

SUMMARY BY TYPE OF SERVICE: Recommendations sorted by service, time frame (Short-term, Medium-term and Long-term) and priority (High, Medium, Low)

INTERPRETIVE SERVICE	EXISTING OR NEW?	TIME FRAME (SHORT, MED, LONG)	PRIORITY WITHIN TIME FRAME (HIGH, MED, LOW)	THEME ADDRESSED	AUDIENCES SERVED	FUNDING	STATUS
PERSONAL SERVICES							
Provide evening programs	Existing/New	Short	High	All themes	General Recreational Virtual	ONPS, 80%, 20%	Ongoing as needed
Provide night sky programs including light and air pollution, green technology, climate change (Could be evening programs, media station, porch talk, curriculum materials)	Existing/New	Short	High	Theme 5 & 6: Wilderness, Ecology	General Recreational Curric (3-6, H, C) Virtual	ONPS, 80%, 20%, PAC	Ongoing as needed
Produce onsite ecology programs & publications including fire ecology and cave ecology, non-native species and species lists	Existing/New	Short	High	Theme 6: Ecology	General Curric (Preschool-C)	ONPS, PAC	Ongoing as needed
Provide more developed cave tours (more caves, more seasons)	New	Short	High	Theme 1: Caves	Recreational	VIP, OFS, ONPS	Seek funding
Provide living history (existing and beyond Timeline)	Existing/New	Short – Medium	High	Theme 2, 3, 7 & 8: Modoc War, Native American culture, Pre-monument history, Park development	General Recreational Curric: 3-6 grade (3-6), Jr-Sr High (H), College (C) Virtual	VIP, PAC, 80%, ONPS	Ongoing, Explore, Expand
Provide guided walks Including new geology trail, Petroglyph Point and Stronghold	Existing/New	Short - Medium	High	Theme 2, 3 & 4: Geology, Modoc War, Native American culture	General Recreational Curric (3-6, H)	ONPS	Seek funding

INTERPRETIVE SERVICE	EXISTING OR NEW?	TIME FRAME (SHORT, MED, LONG)	PRIORITY WITHIN TIME FRAME (HIGH, MED, LOW)	THEME ADDRESSED	AUDIENCES SERVED	FUNDING	STATUS
PERSONAL SERVICES (CONTINUED)							
Create and provide offsite programs	Existing/New	Short - Medium	High	Theme 1, 2, 4 & 6: Caves Modoc War, Ecology, Geology	Curric (Preschool-C)	PAC, 80%, OFS	In process, began planning
Provide guided tours of Fern Cave and Crystal Ice Cave at existing levels	Existing	Short - Medium	High	Theme 1 & 3: Caves, Native American culture	General Recreational	ONPS	ongoing
Create and provide ranger programs not including evening programs & guided walks	Existing/New	Short	Medium	Themes 2, 3, 4, 5 & 7 : Modoc War, Native American culture, Geology, Wilderness, Pre-monument History	General Recreational Curric (3-6, H) Virtual	ONPS, PAC, 80%, 20%	Ongoing as needed
Increase roving interpretation in caves	Existing	Short	Medium	Theme 1: Caves	General Recreational	VIP, OFS	Seek funding
Host interpretation by tribal members (including seasonal training, education programs, talks)	Existing	Short - Medium	Medium	Theme 2 & 3: Native American culture, Modoc War	General Curric (3-6, H, C)		Explore
Increased tribal partnerships, including seminars, distance learning, ethnography, offsite outreach	New	Medium – Long	High	Theme 2 & 3, Modoc War, Native American culture	General Curric (3-9, H, C)	VIP, ONPS	Explore
Create opportunities for service projects and citizen science (Check resource stewardship strategy for guidelines; labor intensive)	New	Medium – Long	Medium	Theme 1 & 6: Caves and Ecology	Recreational Curric (H, C)	VIP, NRPP	Explore

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Personal Services (Continued)							
Partner w/other parks, sites, museums, etc., that share Native American history	New	Medium - Long	Low	Theme 2: Modoc War	Recreational Curric Virtual	20%	Explore
Coordinate seminars and activities on resource-based current issues with hiking clubs and other organized groups	New	Medium –Long	Low	Theme 5 & 6: Wilderness and Ecology	Recreational Curric (3-6, H, C)	20%, PAC	Explore
Provide opportunities for public participation in archaeological research (investigate this carefully)	New	Long	High	Theme 3: Native American culture	Recreational Curric (C)	ONPS, PAC	Explore
Coordinate caving seminars for different levels of expertise	New	Long	Low	Theme 1: Caves	General Recreational Virtual	20%, PAC	Explore
Develop smart phone app about wilderness (soundscape, ethics, etc)	New	Long	Low	Theme 5 : Wilderness	General Recreational Curric (3-6, H, C) Virtual ADA	20%, PAC	Explore
Provide more tours of special resource caves (e.g. Post Office cave)	New	Long	Low	Theme 1: Caves	Recreational		Explore
Publications							
Produce ecology onsite programs & publications Including fire ecology and cave ecology, non-native species and species lists	Existing/New	Short	High	Theme 6: Ecology	General Curric (Preschool-C)	ONPS, PAC	Ongoing as needed

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Publications (Continued)							
Review & update all existing trail guides Including Stronghold, Gillems, and Petroglyph Point	New	Short – Medium	High	Theme 2, 3 & 7: Modoc War, Native American culture, Pre-monument history	General Recreational Curric	ONPS, 80%, NHA	Seek funding
Produce brochures on wilderness ethics/ camping	Existing/New	Short – Medium	Medium	Theme 5: Wilderness	General Recreational Curric (3-6, H, C) Virtual	20%, ONPS	As needed
Develop new or adapted existing trail to become a self-guiding geology trail	New	Medium	Low	Theme 4: Geology	General Recreational	20%	Explore
Produce guides & maps for popular caves	New	Medium - Long	Medium	Theme 1: Caves	General Recreational Curric	NRPP, 20%, VIP	In progress/ seek additional funding
Improve maps and information about sites outside park in consultation with tribes, other agencies, and landowners	Existing	Long	Low	Theme 2: Modoc War	Recreational		As needed
New Media							
Social media (YouTube, etc)	New	Short	Low	Theme 1: Caves	Curric (3-6, H) Virtual	PAC, 20%	Seek funding
Interpret historic landscape and/or produce web exhibit of collections/ historic photos	New	Medium	Medium	Theme 8: Park development	General Recreational Curric (3-6, H) Virtual	ONPS, Exhibit Cyclic	Began Planning

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
New Media (Continued)							
Create new media including 3D modeling/virtual tour w/animation, interactive museum exhibit or other new media (ex: webcam of Hawaii volcanoes NP)	New	Medium - Long	High	Theme 4: Geology	General Recreational Curric (via DVD) Virtual ADA	20%, NRPP, Exhibit Cyclic	Explore
Create and provide distance learning programs	New	Medium - Long	High	Theme 1, 2, 3 & 7: Caves, Modoc War, Native American culture, Pre-monument history	Curric (3-6, H, C) Virtual	PAC, YPP, 20%, 80%	Explore
Create 3D modeling/virtual tours	New	Medium – Long	High	Theme 1: Caves	General Curric (3-6, H, C) Virtual ADA	Exhibit Cyclic, 20%, NRPP	Explore
Develop interpretive media using oral histories Includes collection of oral histories	New	Medium – Long	High	Theme 7 & 8: Pre-monument history, Park development	General Recreational Curric (3-6, H, C) Virtual	ONPS, Exhibit Cyclic, 80%	Ongoing, Began Planning
Develop online and new media using Modoc war collection including online and other new media and teacher resources, media station	New	Medium - Long	Medium	Theme 2: Modoc War	General Recreational Curric Virtual	20%, Exhibit Cyclic, CRPP	In Process, Explore
Assess installation, and interpret natural resources via remote cams including wildlife cams, air quality, etc.	New	Medium – Long	Medium	Theme 5 & 6: Wilderness, Ecology	General Recreational Curric (P-C) ADA Virtual	20%	Explore
Create 3D model of Stronghold	New	Medium - Long	Low	Theme 2: Modoc War	General Recreational Curric Virtual ADA	Exhibit Cyclic, 20%, NRPP	Explore

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
New Media (Continued)							
Develop smart phone app about caves using remote or bar code scan at cave entrances	New	Medium - Long	Low	Theme 1: Caves	General Recreational Virtual	20%	Explore
Establish web or museum exhibit using photos and items in archived collection	New	Medium – Long	Low	Theme 7: Pre-monument history	General Recreational Curric (3-6, H, C) Virtual ADA	Exhibit Cyclic, ONPS	Explore
Produce new media using archaeological/cultural materials, including rock art on website, media station, etc.	New	Long	High	Theme 3: Native American culture	Recreational Curric (3-6, H, C) Virtual	Exhibit Cyclic, 20%, PAC	Explore
Develop smart phone app about plant and animal communities, and fire including sounds such as bird calls	New	Long	Medium	Theme 6: Ecology	General Recreational Curric (3-6, H, C, in classroom) Virtual	20%, PAC	Explore
Create 3D laser map or other type of virtual rock art interpretation	New	Long	Low	Theme 3: Native American culture	General Recreational Curric (3-6, H, C) Virtual ADA	CRPP	Explore
Develop smart phone app about wilderness (soundscape, ethics, etc)	New	Long	Low	Theme 5 : Wilderness	General Recreational Curric (3-6, H, C) Virtual ADA	20%, PAC	Explore
Traditional Interpretive Media							
Develop museum exhibit on resource protection	New	Short - Medium	Medium	Theme 1: Caves	General Recreational Curric (All) Virtual	Exhibit Cyclic	In Process, Explore additional

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Traditional Interpretive Media (Continued)							
Develop and produce new interpretive media for Mushpot Cave	New	Medium	High	Theme 1: Caves	General Recreational Curric (3-6, H, C) Virtual	Exhibit Cyclic,	Began Planning
Interpret historic landscape and/or produce web exhibit of collections/historic photos	New	Medium	Medium	Theme 8: Park development	General Recreational Curric (3-6, H) Virtual	ONPS, Exhibit Cyclic	Began Planning
Develop interpretive media using oral histories Includes collection of oral histories	New	Medium – Long	High	Theme 7 & 8: Pre-monument history, Park development	General Recreational Curric (3-6, H, C) Virtual	ONPS, Exhibit Cyclic, 80%	Ongoing, Began Planning
Establish web or museum exhibit using photos and items in archived collection	New	Medium – Long	Low	Theme 7: Pre-monument history	General Recreational Curric (3-6, H, C) Virtual ADA	Exhibit Cyclic, ONPS	Explore
Wayside Exhibits							
Develop new or adapt existing trail to become a self-guiding geology trail	New	Medium	Low	Theme 4: Geology	General Recreational Curric Virtual	20%	Explore
Produce tactile petroglyph wayside (and tactile versions for traveling trunk)	New	Long	Low	Theme 3: Native American culture	Curric (P, 3-6) ADA		As needed
Produce wayside along Hwy 139 that interprets the Medicine Lake Volcano	New	Long	Low	Theme 4: Geology	General		As needed

SUMMARY OF INTERPRETIVE SERVICES BY AUDIENCE: Recommendations sorted by audience served, time frame (Short-term, Medium-term and Long-term) and priority (High, Medium, Low)

General/Recreational Audience

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Short-term (1-3 years) and Short - to Medium-term (1-5 years)							
Provide evening programs	Existing/New	Short	High	All themes	General Recreational	ONPS, 80%, 20%	Ongoing as needed
Provide living history (existing and beyond Timeline)	Existing/New	Short – Medium	High	Theme 2, 3, 7 & 8: Modoc War, Native American culture, Pre-monument history, Park development	General Recreational	VIP, PAC, 80%, ONPS	Ongoing, Explore, Expand
Provide night sky programs Include light and air pollution, green technology, climate change (Could be evening programs, media station, porch talk, curriculum materials)	Existing/New	Short	High	Theme 5 & 6: Wilderness, Ecology	General Recreational	ONPS, 80%, 20%, PAC	Ongoing as needed
Provide guided walks Including new geology trail, Petroglyph Point and Stronghold	Existing/New	Short - Medium	High	Theme 2, 3 & 4: Geology, Modoc War, Native American culture	General Recreational	ONPS	Seek funding
Produce onsite ecology programs & publications Including fire ecology, cave ecology, non-native species, and species lists	Existing/New	Short	High	Theme 6: Ecology	General	ONPS, PAC	Ongoing as needed
Review & update all existing trail guides Including Stronghold, Gillems, and Petroglyph Point	New	Short – Medium	High	Theme 2, 3 & 7: Modoc War, Native American culture, Pre-monument history	General Recreational	ONPS, 80%, NHA	Seek funding

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Short-term (1-3 years) and Short - to Medium-term (1-5 years) (Continued)							
Provide guided tours of Fern Cave and Crystal Ice Cave at existing levels	Existing	Short - Medium	High	Theme 1 & 3: Caves, Native American culture	General Recreational	ONPS	Ongoing
Provide more developed cave tours as resources permit (more caves, more seasons)	New	Short	High	Theme 1: Caves	Recreational	VIP, OFS, ONPS	Seek funding
Create and provide ranger programs not including evening programs & guided walks	Existing/New	Short	Medium	Themes 2, 3, 4, 5 & 7 : Modoc War, Native American culture, Geology, Wilderness, Pre-monument History	General Recreational	ONPS, PAC, 80%, 20%	Ongoing as needed
Develop museum exhibit on resource protection	New	Short - Medium	Medium	Theme 1: Caves	General Recreational	Exhibit Cyclic	In Process, Explore additional
Host interpretation by tribal members (including seasonal training, education programs, talks)	Existing	Short - Medium	Medium	Theme 2 & 3: Native American culture, Modoc War	General		Explore
Produce brochures on wilderness ethics/camping	New/Existing	Short – Medium	Medium	Theme 5: Wilderness	General Recreational	20%, ONPS	As needed
Increase roving interpretation in caves	Existing	Short	Medium	Theme 1: Caves	General Recreational	VIP, OFS	Seek funding
Medium - (3-5 years) and Medium - to Long-term (3-10 years)							
Create new media including 3D modeling/virtual tour w/animation, interactive museum exhibit or other new media (ex: webcam of Hawaii Volcanoes NP)	New	Medium - Long	High	Theme 4: Geology	General Recreational	20%, NRPP, Exhibit Cyclic	Explore

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Medium - (3-5 years) and Medium - to Long-term (3-10 years) (Continued)							
Increased tribal partnerships including seminars, distance learning, ethnography, offsite outreach	New	Medium – Long	High	Theme 2 & 3, Modoc War, Native American culture	General	VIP, ONPS	Explore
Develop interpretive media using oral histories includes collection of oral histories	New	Medium – Long	High	Theme 7 & 8: Pre-monument history, Park development	General Recreational	ONPS, Exhibit Cyclic, 80%	Ongoing, Began Planning
Create and provide distance learning programs	New	Medium - Long	High	Theme 1, 2, 3 & 7: Caves, Modoc War, Native American culture, Pre-monument History		PAC, YPP, 20%, 80%	Explore
Develop and produce new interpretive media for Mushpot Cave	New	Medium	High	Theme 1: Caves	General Recreational	Exhibit Cyclic,	Began Planning
Create a 3D model virtual cave tour	New	Medium – Long	High	Theme 1: Caves	General	Exhibit Cyclic, 20%, NRPP	Explore
Assess installation and interpretation of natural resources via remote cams including wildlife cams, air quality, etc.	New	Medium – Long	Medium	Theme 5 & 6: Wilderness, Ecology	General Recreational	20%	Explore
Develop online and new media using Modoc war collection including online and other new media and teacher resources, media station	New	Medium - Long	Medium	Theme 2: Modoc War	General Recreational	20%, Exhibit Cyclic, CRPP	In Process, Explore

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Medium - (3-5 Years) and Medium - to Long-term (3-10 Years) <i>(Continued)</i>							
Produce guides & maps for popular caves	New	Medium - Long	Medium	Theme 1: Caves	General Recreational	NRPP, 20%, VIP	In progress/ seek additional funding
Create opportunities for service projects and citizen science	New	Medium – Long	Medium	Theme 1 & 6: Caves and Ecology	Recreational	VIP, NRPP	Explore
Interpret historic landscape and/or produce web exhibit of collections/ historic photos	New	Medium	Medium	Theme 8: Park development	General Recreational	ONPS, Exhibit Cyclic	Began Planning
Develop new or adapted existing trail to become a self-guiding geology trail	New	Medium	Low	Theme 4: Geology	General Recreational	20%	Explore
Establish web or museum exhibit using photos and items in archived collection	New	Medium – Long	Low	Theme 7: Pre-monument history	General Recreational	Exhibit Cyclic, ONPS	Explore
Create 3D model of Stronghold	New	Medium - Long	Low	Theme 2: Modoc War	General Recreational	Exhibit Cyclic, 20%, NRPP	Explore
Develop smart phone app about caves using remote or bar code scan at cave entrances	New	Medium - Long	Low	Theme 1: Caves	General Recreational	20%	Explore
Partner w/other parks, sites, museums, etc., that share Native American history	New	Medium - Long	Low	Theme 2: Modoc War	Recreational	20%	Explore
Coordinate seminars and activities on resource-based current issues with hiking clubs and other organized groups	New	Medium –Long	Low	Theme 5 & 6: Wilderness and Ecology	Recreational	20%, PAC	Explore

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Long-term (5-10 Years)							
Produce new media using archaeological/ cultural materials including rock art on website, media station, etc.	New	Long	High	Theme 3: Native American culture	Recreational	Exhibit Cyclic, 20%, PAC	Explore
Provide opportunities for public participation in cultural resource research	New	Long	High	Theme 3: Native American culture	Recreational	ONPS, PAC	Explore
Develop smart phone app about plant and animal communities and fire (including sounds such as bird calls)	New	Long	Medium	Theme 6: Ecology	General Recreational	20%, PAC	Explore
Create 3D laser map or other type of virtual rock art interpretation	New	Long	Low	Theme 3: Native American culture	General Recreational	CRPP	Explore
Coordinate caving seminars for different levels of expertise	New	Long	Low	Theme 1: Caves	General Recreational	20%, PAC	Explore
Develop smart phone app about wilderness (soundscape, ethics, etc)	New	Long	Low	Theme 5 : Wilderness	General Recreational	20%, PAC	Explore
Provide more tours of special resource caves (e.g. Post Office Cave)	New	Long	Low	Theme 1: Caves	Recreational		Explore
Improve maps and information about sites outside park in consultation with tribes, other agencies, and landowners	Existing	Long	Low	Theme 2: Modoc War	Recreational		As needed

INTERPRETIVE SERVICE	EXISTING OR NEW?	TIME FRAME (SHORT, MED, LONG)	PRIORITY WITHIN TIME FRAME (HIGH, MED, LOW)	THEME ADDRESSED	AUDIENCES SERVED	FUNDING	STATUS
LONG-TERM (5-10 YEARS) (CONTINUED)							
Produce wayside along Hwy 139 that interprets the Medicine Lake Volcano	New	Long	Low	Theme 4: Geology	General		As needed

SUMMARY OF INTERPRETIVE SERVICES BY AUDIENCE: Recommendations sorted by audience served, time frame (Short-term, Medium-term and Long-term) and priority (High, Medium, Low)

Curriculum-based groups

SHORT-TERM (1-3 YEARS) AND SHORT - TO MEDIUM-TERM (1-5 YEARS)							
Provide living history (existing and beyond Timeline)	Existing/New	Short – Medium	High	Theme 2, 3, 7 & 8 : Modoc War, Native American culture, Pre-monument history, Park development	Curric: 3-6 grade (3-6), Jr-Sr High (H), College (C)	VIP, PAC, 80%, ONPS	Ongoing, Explore, Expand
Provide night sky programs Include light and air pollution, green technology, climate change (Could be evening programs, media station, porch talk, curriculum materials)	Existing/New	Short	High	Theme 5 & 6: Wilderness, Ecology	Curric (3-6, H, C)	ONPS, 80%, 20%, PAC	Ongoing as needed
Provide guided walks Including new geology trail, Petroglyph Point and Stronghold	Existing/New	Short - Medium	High	Theme 2, 3 & 4: Geology, Modoc War, Native American culture	Curric (3-6, H)	ONPS	Seek funding
Produce onsite ecology programs & publications Including fire ecology, cave ecology, non-native species, and species lists	Existing/New	Short	High	Theme 6: Ecology	Curric (Preschool-C)	ONPS, PAC	Ongoing as needed

INTERPRETIVE SERVICE	EXISTING OR NEW?	TIME FRAME (SHORT, MED, LONG)	PRIORITY WITHIN TIME FRAME (HIGH, MED, LOW)	THEME ADDRESSED	AUDIENCES SERVED	FUNDING	STATUS
SHORT-TERM (1-3 YEARS) AND SHORT - TO MEDIUM-TERM (1-5 YEARS) (CONTINUED)							
Review & update all existing trail guides Including Stronghold, Gillems, and Petroglyph Point	New	Short – Medium	High	Theme 2, 3 & 7: Modoc War, Native American culture, Pre-monument History	Curric (all)	ONPS, 80%, NHA	Seek funding
SHORT-TERM (1-3 YEARS) AND SHORT - TO MEDIUM-TERM (1-5 YEARS) (CONTINUED)							
Create and provide offsite programs	Existing/New	Short - Medium	High	Theme 1, 2, 4 & 6: Caves, Modoc War, Ecology,Geology	Curric (Preschool-C	PAC, 80%, OFS	In process, began planning
Provide guided tours of Fern Cave and Crystal Ice Cave at existing levels	Existing	Short - Medium	High	Theme 1 & 3: Caves, Native American culture	General Recreational	ONPS	Ongoing
Create and provide ranger programs not including evening programs & guided walks	Existing/New	Short	Medium	Themes 2,3, 4, 5 & 7: Modoc War, Native American culture, Geology, Wilderness, Pre-monument history	Curric (3-6, H)	ONPS, PAC, 80%, 20%	Ongoing as needed
Develop museum exhibit on resource protection	New	Short - Medium	Medium	Theme 1: Caves	Curric (All)	Exhibit Cyclic	In Process, Explore additional
Host interpretation by tribal members (including seasonal training, education programs, talks)	Existing	Short - Medium	Medium	Theme 2 & 3: Native American culture, Modoc War	Curric (3-6, H, C)		Explore
Produce brochures on wilderness ethics/ camping	New/Existing	Short – Medium	Medium	Theme 5: Wilderness	Curric (3-6, H, C)	20%, ONPS	As needed
Social media (YouTube, etc)	New	Short	Low	Theme 1: Caves	Curric (3-6, H)	PAC, 20%	Seek funding

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Medium - (3-5 Years) and Medium - to Long-term (3-10 Years)							
Create new media including 3D modeling/virtual tour w/animation, interactive museum exhibit or other new media (ex: webcam of Hawaii Volcanoes NP)	New	Medium - Long	High	Theme 4: Geology	Curric (via DVD)	20%, NRPP, Exhibit Cyclic	Explore
Increased tribal partnerships including seminars, distance learning, ethnography, offsite outreach	New	Medium – Long	High	Theme 2 & 3, Modoc War, Native American culture	Curric (3-6, H, C)	VIP, ONPS	Explore
Develop interpretive media using oral histories includes collection of oral histories	New	Medium – Long	High	Theme 7 & 8: Pre-monument history, Park development	Curric (3-6, H, C)	ONPS, Exhibit Cyclic, 80%	Ongoing, Began Planning
Create and provide distance learning programs	New	Medium - Long	High	Theme 1, 2, 3 & 7: Caves, Modoc War, Native American culture, Pre-monument history	Curric (3-6, H, C)	PAC, YPP, 20%, 80%	Explore
Develop and produce new interpretive media for Mushpot Cave	New	Medium	High	Theme 1: Caves	Curric (3-6, H, C)	Exhibit Cyclic,	Began Planning
Create a 3D model virtual cave tour	New	Medium – Long	High	Theme 1: Caves	Curric (3-6, H, C)	Exhibit Cyclic, 20%, NRPP	Explore
Interpret and install natural resources remote cams including wildlife cams, air quality, etc.	New	Medium – Long	Medium	Theme 5 & 6: Wilderness, Ecology	Curric (P-C)	20%	Explore
Develop online and new media using Modoc war collection including online and other new media and teacher resources, media station	New	Medium - Long	Medium	Theme 2: Modoc War	Curric (All)	20%, Exhibit Cyclic, CRPP	In Process, Explore

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Medium - (3-5 Years) and Medium - to Long-term (3-10 Years) (CONTINUED)							
Produce guides & maps for popular caves	New	Medium - Long	Medium	Theme 1: Caves	Curric (All)	NRPP, 20%, VIP	In progress/ seek additional funding
Create opportunities for service projects and citizen science	New	Medium – Long	Medium	Theme 1 & 6: Caves and Ecology	Curric (H, C)	VIP, NRPP	Explore
Interpret historic landscape and/or produce web exhibit of collections/historic photos	New	Medium	Medium	Theme 8: Park development	Curric (3-6, H)	ONPS, Exhibit Cyclic	Began Planning
Develop new or adapt existing trail to become a self-guiding geology trail	New	Medium	Low	Theme 4: Geology	Curric (All)	20%	Explore
Establish web or museum exhibit using photos and items in archived collection	New	Medium – Long	Low	Theme 7: Pre-monument history	Curric (3-6, H, C)	Exhibit Cyclic, ONPS	Explore
Create 3D model of Stronghold	New	Medium - Long	Low	Theme 2: Modoc War	Curric (All)	Exhibit Cyclic, 20%, NRPP	Explore
Partner w/other parks, sites, museums, etc., that share Native American history	New	Medium - Long	Low	Theme 2: Modoc War	Curric (All)	20%	Explore
Coordinate seminars and activities on resource-based current issues with hiking clubs and other organized groups	New	Medium - Long	Low	Theme 5 & 6: Wilderness and Ecology	Curric (3-6, H, C)	20%, PAC	Explore
Produce new media using archaeological/cultural materials including rock art on website, media station, etc.	New	Long	High	Theme 3: Native American culture	Curric (3-6, H, C)	Exhibit Cyclic, 20%, PAC	Explore

INTERPRETIVE SERVICE	EXISTING OR NEW?	TIME FRAME (SHORT, MED, LONG)	PRIORITY WITHIN TIME FRAME (HIGH, MED, LOW)	THEME ADDRESSED	AUDIENCES SERVED	FUNDING	STATUS
LONG-TERM (5-10 YEARS)							
Provide opportunities for public participation in cultural resource research	New	Long	High	Theme 3: Native American culture	Curric (C)	ONPS, PAC	Explore
Develop smart phone app about plant and animal communities and fire (including sounds such as bird calls)	New	Long	Medium	Theme 6: Ecology	Curric (3-6, H, C, in classroom)	20%, PAC	Explore
Create 3D laser map or other type of virtual rock art interpretation	New	Long	Low	Theme 3: Native American culture	Curric (3-6, H, C)	CRPP	Explore
Develop smart phone app about wilderness (soundscape, ethics, etc)	New	Long	Low	Theme 5 : Wilderness	Curric (3-6, H, C)	20%, PAC	Explore
Produce tactile petroglyph wayside (and tactile versions for traveling trunk)	New	Long	Low	Theme 3: Native American culture	Curric (P, 3-6)		As needed

SUMMARY OF INTERPRETIVE SERVICES BY AUDIENCE: Recommendations sorted by audience served, time frame (Short-term, Medium-term and Long-term) and priority (High, Medium, Low)

Virtual audience

INTERPRETIVE SERVICE	EXISTING OR NEW?	TIME FRAME (SHORT, MED, LONG)	PRIORITY WITHIN TIME FRAME (HIGH, MED, LOW)	THEME ADDRESSED	AUDIENCES SERVED	FUNDING	STATUS
SHORT-TERM (1-3 YEARS) AND SHORT - TO MEDIUM-TERM (1-5 YEARS)							
Provide evening programs	Existing/New	Short	High	All themes	Virtual	ONPS, 80%, 20%	Ongoing as needed
Provide living history (existing and beyond Timeline)	Existing/New	Short – Medium	High	Theme 2, 3, 7 & 8 : Modoc War, Native American culture, Pre-monument history, Park development	Virtual	VIP, PAC, 80%, ONPS	Ongoing, Explore, Expand
Provide night sky programs Include light and air pollution, green technology, climate change (Could be evening programs, media station, porch talk, curriculum materials)	Existing/New	Short	High	Theme 5 & 6: Wilderness, Ecology	Virtual	ONPS, 80%, 20%, PAC	Ongoing as needed
Create and provide ranger programs not including evening programs & guided walks	Existing/New	Short	Medium	Themes 2, 3, 4, 5 & 7 : Modoc War, Native American culture, Geology, Wilderness, Pre-monument history	Virtual	ONPS, PAC, 80%, 20%	Ongoing as needed
Develop museum exhibit on resource protection	New	Short - Medium	Medium	Theme 1: Caves	Virtual	Exhibit Cyclic	In Process, Explore additional
Produce brochures on wilderness ethics/ camping	Existing/New	Short – Medium	Medium	Theme 5: Wilderness	Virtual	20%, ONPS	As needed
Social media (YouTube, etc)	New	Short	Low	Theme 1: Caves	Virtual	PAC, 20%	Seek funding

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Medium - (3-5 Years) and Medium - to Long-term (3-10 Years)							
Create new media including 3D modeling/virtual tour w/animation, interactive museum exhibit or other new media (ex: webcam of Hawaii Volcanoes NP)	New	Medium - Long	High	Theme 4: Geology	Virtual	20%, NRPP, Exhibit Cyclic	Explore
Develop interpretive media using oral histories Includes collection of oral histories	New	Medium – Long	High	Theme 7 & 8: Pre-monument history, Park development	Virtual	ONPS, Exhibit Cyclic, 80%	Ongoing, Began Planning
Create and provide distance learning programs	New	Medium - Long	High	Theme 1, 2, 3 & 7: Caves, Modoc War, Native American culture, Pre-monument history	Virtual	PAC, YPP, 20%, 80%	Explore
Develop and produce new interpretive media for Mushpot Cave	New	Medium	High	Theme 1: Caves	Virtual	Exhibit Cyclic,	Began Planning
Create a 3D model virtual cave tour	New	Medium – Long	High	Theme 1: Caves	Virtual	Exhibit Cyclic, 20%, NRPP	Explore
Assess installation and interpretation of natural resources via remote cams including wildlife cams, air quality, etc.	New	Medium – Long	Medium	Theme 5 & 6: Wilderness, Ecology	Virtual	20%,	Explore
Develop online and new media using Modoc war collection including online and other new media and teacher resources, media station	New	Medium - Long	Medium	Theme 2: Modoc War	Virtual	20%, Exhibit Cyclic, CRPP	In Process, Explore

Interpretive Service	Existing or New?	Time Frame (Short, Med, Long)	Priority Within Time Frame (High, Med, Low)	Theme Addressed	Audiences Served	Funding	Status
Medium - (3-5 Years) and Medium - to Long-term (3-10 Years) (CONTINUED)							
Interpret historic landscape and/or produce web exhibit of collections/historic photos	New	Medium	Medium	Theme 8: Park development	Virtual	ONPS, Exhibit Cyclic	Began Planning
Develop new or adapt existing trail to become a self-guiding geology trail	New	Medium	Low	Theme 4: Geology	Virtual	20%	Explore
Establish web or museum exhibit using photos and items in archived collection	New	Medium – Long	Low	Theme 7: Pre-monument history	Virtual	Exhibit Cyclic, ONPS	Explore
Create 3D model of Stronghold	New	Medium - Long	Low	Theme 2: Modoc War	Virtual	Exhibit Cyclic, 20%, NRPP	Explore
Develop smart phone app about caves using remote or bar code scan at cave entrances	New	Medium - Long	Low	Theme 1: Caves	Virtual	20%	Explore
Partner w/other parks, sites, museums, etc., that share Native American history	New	Medium - Long	Low	Theme 2: Modoc War	Virtual	20%	Explore
Long-term (5-10 Years)							
Produce new media using archaeological/cultural materials including rock art on website, media station, etc.	New	Long	High	Theme 3: Native American culture	Virtual	Exhibit Cyclic, 20%, PAC	Explore
Develop smart phone app about plant and animal communities and fire (including sounds such as bird calls)	New	Long	Medium	Theme 6: Ecology	Virtual	20%, PAC	Explore

INTERPRETIVE SERVICE	EXISTING OR NEW?	TIME FRAME (SHORT, MED, LONG)	PRIORITY WITHIN TIME FRAME (HIGH, MED, LOW)	THEME ADDRESSED	AUDIENCES SERVED	FUNDING	STATUS
LONG-TERM (5-10 YEARS) <i>(CONTINUED)</i>							
Create 3D laser map or other type of virtual rock art interpretation	New	Long	Low	Theme 3: Native American culture	Virtual	CRPP	Explore
Coordinate caving seminars for different levels of expertise	New	Long	Low	Theme 1: Caves	Virtual	20%, PAC	Explore
Develop smart phone app about wilderness (soundscape, ethics, etc)	New	Long	Low	Theme 5: Wilderness	Virtual	20%, PAC	Explore



SUMMARY OF INTERPRETIVE SERVICES BY AUDIENCE: Recommendations sorted by audience served, time frame (Short-term, Medium-term and Long-term) and priority (High, Medium, Low)

Special needs

INTERPRETIVE SERVICE	EXISTING OR NEW?	TIME FRAME (SHORT, MED, LONG)	PRIORITY WITHIN TIME FRAME (HIGH, MED, LOW)	THEME ADDRESSED	AUDIENCES SERVED	FUNDING	STATUS
MEDIUM - (3-5 YEARS) AND MEDIUM - TO LONG-TERM (3-10 YEARS)							
Create new media including 3D modeling/ virtual tour w/animation, interactive museum exhibit or other new media (ex: webcam of Hawaii Volcanoes NP)	New	Medium - Long	High	Theme 4: Geology	ADA	20%, NRPP, Exhibit Cyclic	Explore
Create a 3D model virtual cave tours	New	Medium – Long	High	Theme 1: Caves	ADA	Exhibit Cyclic, 20%, NRPP	Explore
Interpret and install natural resources remote cams Including wildlife cams, air quality, etc.	New	Medium – Long	Medium	Theme 5 & 6: Wilderness, Ecology	ADA	20%	Explore
Establish web or museum exhibit using photos and items in archived collection	New	Medium – Long	Low	Theme 7: Pre-monument history	ADA	Exhibit Cyclic, ONPS	Explore
Create 3D model of Stronghold	New	Medium - Long	Low	Theme 2: Modoc War	ADA	Exhibit Cyclic, 20%, NRPP	Explore
LONG-TERM (5-10 YEARS)							
Create 3D laser map or other type of virtual rock art interpretation	New	Long	Low	Theme 3: Native American culture	ADA	CRPP	Explore
Develop smart phone app about wilderness (soundscape, ethics, etc)	New	Long	Low	Theme 5 : Wilderness	ADA	20%, PAC	Explore
Produce tactile petroglyph wayside (and tactile versions for traveling trunk)	New	Long	Low	Theme 3: Native American culture	ADA		As needed

SUMMARY OF INTERPRETIVE SERVICES BY AUDIENCE: Recommendations sorted by audience served, time frame (Short-term, Medium-term and Long-term) and priority (High, Medium, Low)

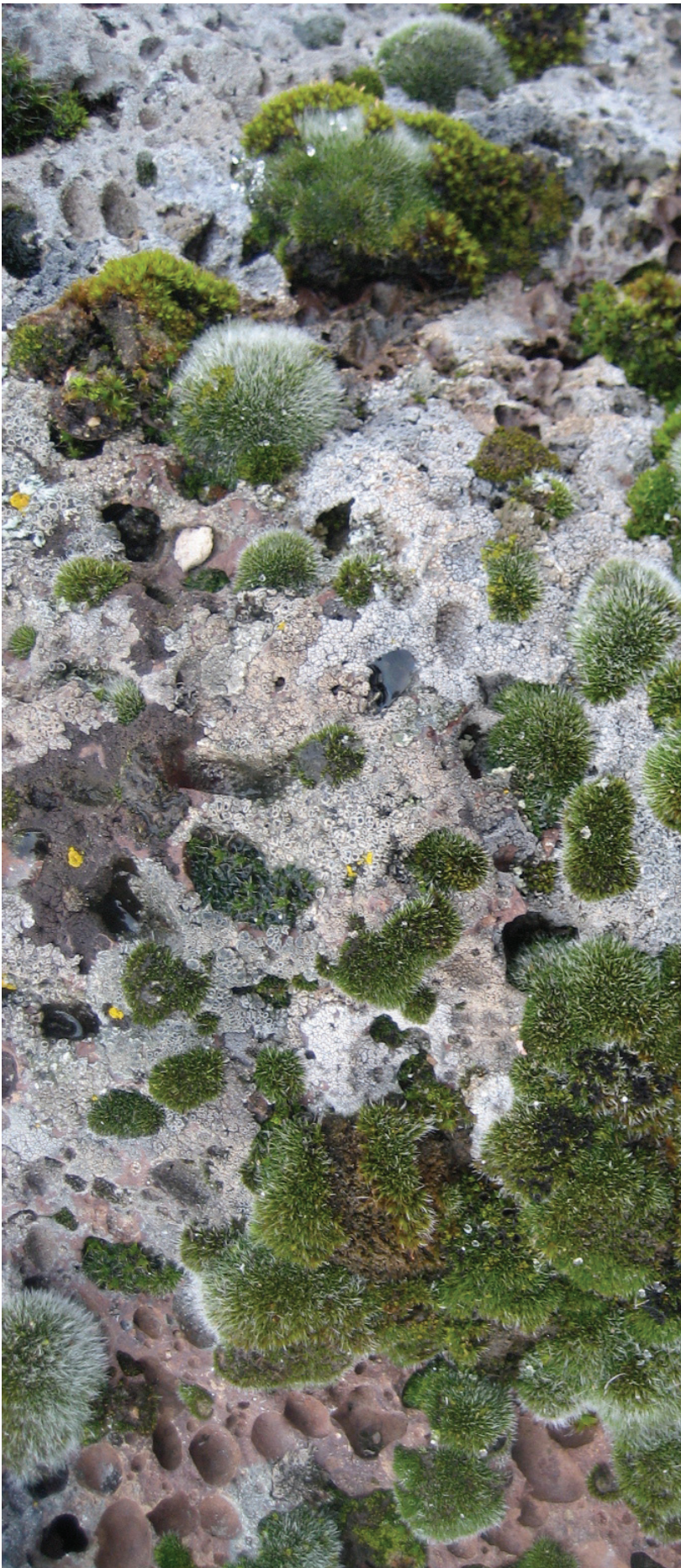
Diverse/underserved audiences

INTERPRETIVE SERVICE	EXISTING OR NEW?	TIME FRAME (SHORT, MED, LONG)	PRIORITY WITHIN TIME FRAME (HIGH, MED, LOW)	THEME ADDRESSED	AUDIENCES SERVED	FUNDING	STATUS
SHORT-TERM (1-3 YEARS) AND SHORT - TO MEDIUM-TERM (1-5 YEARS)							
Provide evening programs (Petroglyph Point)	Existing/New	Short	High	All themes	Underserved	ONPS, 80%, 20%	Ongoing as needed
Produce ecology publications in Spanish Including fire ecology, cave ecology, non-native species, and species lists	Existing/New	Short	High	Theme 6: Ecology	Underserved	ONPS, PAC	Ongoing as needed
Review & update all existing trail guides in Spanish Including Stronghold, Gillems, and Petroglyph Point	New	Short – Medium	High	Theme 2, 3 & 7: Modoc War, Native American culture, Pre-monument history	Underserved	ONPS, 80%, NHA	Seek funding
Host interpretation by tribal members (including seasonal training, education programs, talks)	Existing	Short - Medium	Medium	Theme 2 & 3: Native American culture, Modoc War	Underserved		Explore
Produce brochures on wilderness ethics/camping in Spanish	Existing/New	Short – Medium	Medium	Theme 5: Wilderness	Underserved	20%, ONPS	As needed
MEDIUM - (3-5 YEARS) AND MEDIUM - TO LONG-TERM (3-10 YEARS)							
Increased tribal partnerships including seminars, distance learning, ethnography, offsite outreach	New	Medium – Long	High	Theme 2 & 3, Modoc War, Native American culture	Underserved	VIP, ONPS	Explore

INTERPRETIVE SERVICE	EXISTING OR NEW?	TIME FRAME (SHORT, MED, LONG)	PRIORITY WITHIN TIME FRAME (HIGH, MED, LOW)	THEME ADDRESSED	AUDIENCES SERVED	FUNDING	STATUS
MEDIUM- (3-5 YEARS) AND MEDIUM - TO LONG-TERM (3-10 YEARS) (CONTINUED)							
Develop online and new media using Modoc war collection including online and other new media and teacher resources, media station	New	Medium - Long	Medium	Theme 2: Modoc War	Underserved	20%, Exhibit Cyclic, CRPP	In Process, Explore
Produce guides & maps for popular caves in Spanish	New	Medium - Long	Medium	Theme 1: Caves	Underserved	NRPP, 20%, VIP	In progress/ seek additional funding
Partner w/other parks, sites, museums, etc., that share Native American history	New	Medium - Long	Low	Theme 2: Modoc War	Underserved	20%	Explore

PLANNING TEAM AND CONSULTANTS

Dave Kruse, Superintendent, Lava Beds
Terry Harris, Chief of Interpretation, Lava Beds
Kale Bowling, Lead Interpreter, Lava Beds
Angela Sutton, Education Specialist, Lava Beds
Dave Larson, Chief of Resources Management, Lava Beds
Shane Fryer, Physical Scientist, Lava Beds
Kevin Spencer, Tulelake Elementary School
Rick Jones, Contract Officer’s Representative (COR), Harpers Ferry Center, NPS
Ann C. Clausen, Interpretive Solutions, Inc.
Vid Mednis, Interpretive Solutions, Inc.



Appendix A

Programmatic Accessibility Guidelines for Interpretive Media

Every attempt will be made to promote full access to interpretive media and programs to ensure that people with physical and mental disabilities have access to the same information necessary for safe and meaningful visits to national parks. This is in compliance with the National Park Service policy: NPS Special Directive 83-3, Accessibility for Disabled Persons:

“ . . .To provide the highest level of accessibility possible and feasible for persons with visual, hearing, mobility, and mental impairments, consistent with the obligation to conserve park resources and preserve the qualities of the park experience for everyone.”

In addition, all interpretation will follow general standards for accessibility as described in the Harpers Ferry Center Programmatic Accessibility Guidelines for Interpretive Media. Please see <http://www.nps.gov/hfc/accessibility/index.htm#>.

Appendix B

Public Officials, Agencies, Organizations, and Individuals Receiving a Copy of This Document

FEDERAL AGENCIES

Bureau of Land Management
Alturas Field Office
Lakeview District, Klamath Falls, OR

Bureau of Reclamation
Klamath Basin Area Office

National Park Service
Crater Lake National Park
Denver Service Center
Klamath Network Inventory and
Monitoring Coordinator
Lassen Volcanic National Park
Oregon Caves National Monument
Pacific West Region
Park Planning and Special Studies Division
Redwood National Park
Whiskeytown National Recreation Area

U.S. Fish and Wildlife Service
Klamath Basin National Wildlife Refuges
Region 1

U.S. Forest Service
Modoc National Forest
Klamath National Forest
Shasta-Trinity National Forest
Winema National Forest

U.S. Geological Survey

STATE AGENCIES

California Department of Fish and Game
California Department of Forestry
and Fire Protection
California Department of Parks & Recreation/
California State Parks
Cultural Resources Division
Northern Buttes District
North Coast Redwoods District
California Department of Transportation,
District 2
California Flight Standards District Office
California State Office of Historic Preservation

AMERICAN INDIAN TRIBES AND ORGANIZATIONS

The Klamath Tribes
Klamath Tribe of Oklahoma

COLLEGES, UNIVERSITIES AND SCHOOLS

California State University, Chico
College of the Siskiyous

Humboldt State University
Klamath Community College
Oregon Institute of Technology
Oregon State University
Phoebe A. Hearst Museum of Anthropology,
University of California, Berkeley
Shasta College
Southern Oregon University
Tulelake High School
University of Nevada

ORGANIZATIONS AND BUSINESSES

AAA Oregon
Bravo Tours
California Wilderness Coalition
Capt. Jack’s Restaurant
Cascade Civil War Society
Cave Research Foundation
Civilian Conservation Corps Alumni
Cookeville High Chapter, SPEAK
Dragonfly Adventures
Eagle’s Nest RV Park
Great Basin Visitor Association
High Desert Trail Riders
Jackson Co. Horseman’s Association
Klamath Basin Audubon Society
Klamath Co. Tourism Bureau
Klamath County Museum
Klamath Water Users Association
Klamath Wing Watchers, Inc.
Klamath Falls Horse & Carriage Society
Lassen Tours
LuCena West Tours
Medicine Lake Homeowners Association
Modoc County Historical Society
NACCCA Headquarters
National Parks Conservation Association
National Speleological Society
National Trust for Historic Preservation
Lava Beds Natural History Association
Northwest Trail Riders
Ore-Cal RC&D Area
Rotary International of Tulelake
Shasta Area Grotto
Shaw Historical Library
Sierra Club Chapter - Redding
Siskiyou County Historical Society
Spokes Unlimited
The Wilderness Society
Timber Mountain Store
Tule Lake Preservation Committee
Tule Lake Reunion Group
Tulelake Growers Association
Tulelake Partnership Committee
Tulelake-Butte Valley Fairgrounds
Volcanic Legacy Community Partnership
Volcanic Legacy Scenic Byway
Native Plant Society of Oregon
Wilderness Society
Winema 4H
Yreka Chamber of Commerce

Appendix C

Alternative B: Expanding Learning and Resource Preservation through Collaboration (Preferred Alternative)

MANAGEMENT CONCEPT

Under this alternative Lava Beds National Monument would promote and strengthen resource protection and restoration through stewardship, research, education, and inter-agency cooperation. The monument would strive to engage a broader public through more interpretation, education, and new visitor facilities.

VISITOR EXPERIENCE

The visitor experience at Lava Beds National Monument would be focused on interpretation for a greater diversity of visitors. The monument would reach out to new audiences by expanding interpretive, educational, and recreational opportunities at the monument.

Information and programs on new interpretive topics (e.g., new resource management programs) would be offered. More extensive interpretation on existing topics would also be offered. The monument would employ new technologies for interpretation and education (e.g. virtual cave tours, podcasts for audio tours). More collections would be put on display at the visitor center.

Partnerships with schools, tribes, gateway communities and others would be fostered to provide new opportunities for education. School

groups and volunteers would have opportunities to participate in monument research programs. Workshops and interpretive programs about monument resources would be offered both within and outside of the monument at sites related to park significance (Modoc War battlefields, lava tubes, and portions of the Medicine Lake Volcano).

Expanded recreational opportunities at Lava Beds would include new hiking opportunities and improved day use areas. New hiking trails would primarily include short interpretive loop trails. The NPS would collaborate with the U.S. Forest Service to develop longer trail connections and provide opportunities for appropriate winter sports activities such as cross-country skiing or snowshoeing. More accessible trails would be provided to accommodate users of varying abilities. Several day use areas would be redesigned to better accommodate families and larger groups.

FACILITIES

A limited number of new facilities would be provided to accommodate expanded educational programs, recreational opportunities and research efforts while ensuring that Lava Beds National Monument retains its relatively undeveloped and rustic character. The monument would minimize the intrusion of its existing buildings on monument views through visual screening, applying muted paint colors, installing less reflective roofing materials and minimizing lighting requirements.

Where possible, duplicative and unneeded facilities would be removed and revegetated to reduce the overall facility footprint on the monument and to reduce long-term maintenance obligations.

To better accommodate new educational and research programs, the monument would construct a small addition to the current visitor center to provide classrooms, several offices, and more collections space. The monument would also explore expanding the research center laboratory area to accommodate new research opportunities.

The monument would explore additional office space as efficiently as possible through consideration of leasing in local communities, and co-locating with other agencies before considering new construction or enlarging existing buildings.

STAFFING

Additional full-time staff positions under Alternative B are required for increased research and restoration efforts, new interpretive and educational programming, and additional maintenance needs at Petroglyph Point. In addition, the current permanent GS-09 Physical Scientist position would be converted to a full performance GS-11 Physical Scientist position.

Five Full-time Permanent Staff Positions

- One education specialist
- One resource management specialist

- One visitor protection (law enforcement position)
- Two maintenance positions

Two Term Staff Positions

- One interpreter
- One physical science tech

One Shared/Partner Position

- One science advisor (possibly located at partner university)

Additional part-time/seasonal staff positions under Alternative B

- Four interpreters
- Four resource management technicians

TABLE 6, MANAGEMENT ACTIONS FOR ALTERNATIVE B: INTERPRETATION AND EDUCATION:

The visitor experience would primarily be focused on learning and education for a wide diversity of monument visitors.

INTERPRETATION: The monument would significantly increase the use of new technologies and media to improve the connection of visitors to monument resources.

The monument would display more collections through rotating exhibits.

New exhibits would be provided at the visitor center.

The monument would expand use of its oral collection for historical interpretation and education.

The monument would provide an

increased number of guided cave tours. The monument would explore expanded interpretation both within and outside the monument on topics related to park purpose and significance such as:

- Archeology
- The Civilian Conservation Corps era
- Astronomy/dark night skies
- Geology and Caves
- Restoration ecology
- Fire
- Wilderness use, education and safety
- Natural and cultural resources research and management initiatives

Collaborative efforts to expand interpretation would include:

- working with The Klamath Tribes to interpret history and pre-history,
- coordination between resource management and interpretive staff to provide opportunities for visitors to learn about park research,
- collaborating with the U.S. Fish and Wildlife Service to expand the interpretation of refuges and provide tours, and
- identifying opportunities for the interpretation of additional Modoc War and Civilian Conservation Corps sites outside of the monument.

EDUCATION AND OUTREACH: More in-depth visitor education opportunities would be provided (such as guided tours, workshops and

educational programs) throughout the monument and at related sites throughout the region.

The monument would expand formalized relationships with local and regional schools and collaborate with regional parks on expanded outreach and education.

The visitor center would be expanded to accommodate educational programs and provide more opportunities for teachers, students, and the general public.

The research center would be expanded to include more laboratory space to provide more opportunities for researchers, students, and the general public to participate in research activities at the monument.

Opportunities would be provided for public involvement in research and restoration activities. For example:

- The monument would develop a program for high school and university level students to participate/assist in monument research.
- Public archeology programs and archeology workshops would be conducted.

Interpretation and Education-Impacts From Alternative B (Preferred)

Analysis

Opportunities for Monument Visitors

The Monument’s interpretive services would expand significantly under this alternative. One full-time and four seasonal interpretive positions would be added, allowing additional high-quality interpretive programming and services to be offered at more locations throughout the monument.

A greater number of guided cave tours would also be offered in the spring and summer shoulder seasons, and more than once daily in summer. New written materials would be produced for self guided caving, and a greater ranger and docent presence in the Cave Loop Road area would exist, especially during the summer season. Additional campfire programs and other ranger guided activities such as plant walks and bird watching would be offered.

A new day use area at Petroglyph Point would be staffed seasonally, achieving two goals: visitors entering from the north could pick up brochures, information, and orientation from a staff member; and more interpretive programming would be offered about rock art, traditional culture, birds, and other wildlife, geology, home-steading, and other topics.

Under this alternative, there would be more collaboration between

interpreters and monument scientists to accomplish two goals: expanding visitor understanding about scientific research at Lava Beds, and involving the public directly in research and restoration efforts. The expanded visitor center would be utilized as a site for in-depth interpretive programs and workshops. Cultural history topics could include the monument’s archeological history and human conflict issues in the area such as the Modoc War, and water rights.

A more comprehensive replacement of wayside exhibits throughout the monument would occur, as well as an expansion of the Junior Ranger and other children’s programs for visiting families. Ten additional miles of surface trails would include interpretive services such as guided walks, trail guides, and/or wayside exhibits. Replicas of historical artifacts would be made available for interpretive programming, and increased interpretive efforts would enhance visitor understanding of the area’s cultural landscape. The visitor center museum would incorporate new exhibits, new classrooms/auditorium space, and a virtual tour of monument caves. New media would also be used to interpret monument resources to visitors without the presence of a ranger, such as podcasts, audio driving tours, or interactive media in the visitor center. These services would be added to the wide variety of non-personal interpretive services currently available, such as museum exhibits, an introductory monument film, in-depth brochures on many subjects,

an in-depth monument website, and bulletin board displays throughout the monument. Expanded interpreted topics and visitor facilities that better accommodate educational programming would have long-term, moderate to major, beneficial effects on the ability of visitors to learn about and understand monument resources.

Opportunities for Educational Groups and Members of the Education Community

Alternative B proposes a dedicated full-time Education Specialist, expansion of the visitor center to house classrooms, and possible cooperation with Crater Lake National Park. Teacher workshops would formalize and build upon the monument’s relationships with local teachers and schools. Programs and materials would be expanded to serve a wider range of grade levels and subjects. As changes were implemented from comprehensive education planning, teachers and students would have new learning opportunities through an increase in the number of high-quality, curriculum-based programs offered both in the monument and in classrooms, and well as through loan materials such as traveling trunks. These actions would have long-term, major, beneficial effects on educational opportunities for school groups and researchers.

Many more classes would be able to meet National Park Service standard for a continuum of learning. Teachers and students would notice more cultural history education options

and the incorporation of information collected from oral history interviews in the local area. High school and college-level students would participate directly in scientific research at the Lava Beds Research Center, and younger students would also study or participate in research.

Opportunities for Local Communities, Park Partners, and Neighboring Agencies

An expansion of partnerships with regional parks, community groups, neighboring agencies, and tribes would occur under this alternative resulting in long term, moderate, beneficial effects on communities and partners ability to engage in monument research and education. Monument staff would actively engage in a higher number of community outreach activities, including attending local meetings and a greater number of special events. Community education efforts would take place regarding dark night skies.

A greater number of oral histories would be collected from community members, enhancing personal ties to the monument and establishing a significant repository of knowledge about local history. More cultural history would be incorporated into community programs. The popular Timeline living history/cultural demonstration program would continue to be presented at least once annually, perhaps expanding to include a new day use area at the current West Wildlife Overlook location. This area would also be

available for other special events, demonstrations, or large group use. Access for persons with disabilities would be improved to sites related to the purposes for which the monument was created (preservation of geologic & Modoc War sites). Interpretive programming would be provided at and/ or about Modoc War and Civilian Conservation Corps sites outside the monument, and collaboration with the Klamath Tribes would increase to better interpret tribal history and pre-history. Increased coordinated interpretive efforts would take place with the Klamath Basin Wildlife Refuges to provide services such as guided birding tours, and the monument would collaborate with the Modoc National Forest to interpret the geology of a larger piece of the Medicine Lake volcano. Overall, the expansion of local and regional programs and interpretation of sites outside of the monument related to park purpose, would have a long-term, moderate, beneficial effect on understand and learning about the monument’s significance.

Cumulative Impacts

Cumulative impacts are similar to those described in alternative A. The increased coordination of educational programming and interpretive planning with the adjoining land management agencies, schools, and community organizations proposed in alternative B would contribute moderate to major, beneficial cumulative effects on educational and interpretive opportunities.

Conclusion

Alternative B would permanently expand available interpretive opportunities, education opportunities for students at all grade levels, and the scope of relationships with local entities resulting in long-term, moderate to major, beneficial effects on the interpretive and educational opportunities of the monument’s visitors, teachers and students, and on local communities and organizations. Alternative B would contribute moderate to major beneficial cumulative effects on educational and interpretive opportunities.